# Bachelor of Science in Chemistry and Education with Endorsement in Secondary Education

## MAJOR REQUIREMENTS/CHEMISTRY: 35 Credits (a)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE111</td>
<td>General Chemistry I</td>
<td>3.0</td>
</tr>
<tr>
<td>CE111L</td>
<td>General Chemistry I Lab</td>
<td>1.0</td>
</tr>
<tr>
<td>CE112</td>
<td>General Chemistry II</td>
<td>3.0</td>
</tr>
<tr>
<td>CE112L</td>
<td>General Chemistry II Lab</td>
<td>1.0</td>
</tr>
<tr>
<td>CE221</td>
<td>Quantitative Analysis</td>
<td>2.0</td>
</tr>
<tr>
<td>CE221L</td>
<td>Quantitative Analysis Lab</td>
<td>2.0</td>
</tr>
<tr>
<td>CE241</td>
<td>Organic Chemistry I</td>
<td>3.0</td>
</tr>
<tr>
<td>CE241L</td>
<td>Organic Chemistry I Lab</td>
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</tr>
<tr>
<td>CE242</td>
<td>Organic Chemistry II</td>
<td>3.0</td>
</tr>
<tr>
<td>CE242L</td>
<td>Organic Chemistry II Lab</td>
<td>2.0</td>
</tr>
<tr>
<td>CE311</td>
<td>Chemical Literature</td>
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</tr>
<tr>
<td>CE322</td>
<td>Instrumental Analysis</td>
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</tr>
<tr>
<td>CE322L</td>
<td>Instrumental Analysis Lab</td>
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</tr>
<tr>
<td>CE372</td>
<td>P.Chem: Intro to Spectroscopy and Quantum Chem.</td>
<td>3.0</td>
</tr>
<tr>
<td>CE372L</td>
<td>P.Chem: Intro to Spectroscopy and Quantum Chem. Lab</td>
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</tr>
<tr>
<td>CE410</td>
<td>Seminar</td>
<td>1.0</td>
</tr>
<tr>
<td>CE4xx</td>
<td>CHEMISTRY OUTSIDE MAJOR REQUIREMENTS: 18 Credits</td>
<td></td>
</tr>
<tr>
<td>MA125</td>
<td>Calculus with Analytic Geometry I</td>
<td>4.0</td>
</tr>
<tr>
<td>MA126</td>
<td>Calculus with Analytic Geometry II</td>
<td>4.0</td>
</tr>
<tr>
<td>PH211</td>
<td>General Physics and Calculus I</td>
<td>4.0</td>
</tr>
<tr>
<td>PH211L</td>
<td>General Physics w/Calculus I Lab</td>
<td>1.0</td>
</tr>
<tr>
<td>PH212</td>
<td>General Physics w/Calculus II</td>
<td>4.0</td>
</tr>
<tr>
<td>PH212L</td>
<td>General Physics w/Calculus II Lab</td>
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## MAJOR REQUIREMENTS/EDUCATION: 24 Credits (b)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ED250</td>
<td>Foundations of Teaching and Learning</td>
<td>3.0</td>
</tr>
<tr>
<td>EDL201</td>
<td>Educational Psychology</td>
<td>3.0</td>
</tr>
<tr>
<td>EDL206</td>
<td>Child and Adolescent Development</td>
<td>3.0</td>
</tr>
<tr>
<td>ED319</td>
<td>Content Literacy</td>
<td>3.0</td>
</tr>
<tr>
<td>ED319N</td>
<td>NCATE Assessment</td>
<td>0.0</td>
</tr>
<tr>
<td>ED320</td>
<td>Teaching Students with Diverse Needs</td>
<td>3.0</td>
</tr>
<tr>
<td>ED416</td>
<td>Student Teaching AND</td>
<td>8.0</td>
</tr>
<tr>
<td>ED416S</td>
<td>Seminar in Student Teaching</td>
<td>1.0</td>
</tr>
<tr>
<td>ED417</td>
<td>Supervised Student Teaching AND</td>
<td>8.0</td>
</tr>
<tr>
<td>ED417S</td>
<td>Seminar - Supervised Student Teaching</td>
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## EDUCATION METHODS REQUIREMENTS: 6 Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED369</td>
<td>Teaching Secondary Science, Part I</td>
<td>3.0</td>
</tr>
<tr>
<td>ED375</td>
<td>Secondary Teaching Methods Part I</td>
<td>3.0</td>
</tr>
<tr>
<td>ED370</td>
<td>Teaching Secondary Science, Part II</td>
<td>3.0</td>
</tr>
<tr>
<td>ED376</td>
<td>Secondary Teaching Methods Part II</td>
<td>3.0</td>
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## CHEMISTRY OUTSIDE MAJOR REQUIREMENTS: 18 Credits

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MA125</td>
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<td>4.0</td>
</tr>
<tr>
<td>MA126</td>
<td>Calculus with Analytic Geometry II</td>
<td>4.0</td>
</tr>
<tr>
<td>PH211</td>
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<td>4.0</td>
</tr>
<tr>
<td>PH211L</td>
<td>General Physics w/Calculus I Lab</td>
<td>1.0</td>
</tr>
<tr>
<td>PH212</td>
<td>General Physics w/Calculus II</td>
<td>4.0</td>
</tr>
<tr>
<td>PH212L</td>
<td>General Physics w/Calculus II Lab</td>
<td>1.0</td>
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## EDUCATION OUTSIDE MAJOR REQUIREMENTS: 3 Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>PY103</td>
<td>Introduction to Psychology</td>
<td>3.0</td>
</tr>
</tbody>
</table>

## FREE ELECTIVES: 9 Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
</table>

(a) Students desiring certification by the ACS should enroll in the BS.CE ACS program

(b) Minimum grade of "C" required for Education Courses

(c) Students must complete the appropriate test requirement(s) with a passing score PRIOR to Student Teaching.
### Bachelor of Science in Chemistry and Education with Endorsement in Secondary Education

<table>
<thead>
<tr>
<th>GENERAL EDUCATION REQUIREMENTS: 33 Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Seminar</td>
<td>3.0</td>
</tr>
<tr>
<td>FY-101: First Year Seminar *(Select Section &quot;CE&quot;)</td>
<td></td>
</tr>
<tr>
<td>Reading and Writing</td>
<td>3.0</td>
</tr>
<tr>
<td>EN101: College Composition I</td>
<td></td>
</tr>
<tr>
<td>EN102: College Composition II</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>0.0</td>
</tr>
<tr>
<td>Fulfilled in Outside Major Requirements with MA125, or MA126</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>0.0</td>
</tr>
<tr>
<td>Fulfilled in Major Requirements with required CE courses</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td>3.0</td>
</tr>
<tr>
<td>3 Credits from courses designated with Course*Type: LIT</td>
<td></td>
</tr>
<tr>
<td>Aesthetics and Creativity</td>
<td>3.0</td>
</tr>
<tr>
<td>3 Credits from Art, Music, Theatre, or Dance</td>
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<tr>
<td>Technological Literacy</td>
<td>3.0</td>
</tr>
<tr>
<td>IT102: Information Technology for Scientists</td>
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<tr>
<td>Reasoned Oral Discourse</td>
<td>0.0</td>
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<tr>
<td>Fulfilled in the Education Major Requirements with ED320</td>
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<tr>
<td>Historical Perspective</td>
<td>3.0</td>
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<tr>
<td>3 Credits from courses designated with Course*Type: HS.SV</td>
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<tr>
<td>Social Science</td>
<td>0.0</td>
</tr>
<tr>
<td>Fulfilled in Education Outside Major Requirements with PY103</td>
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<tr>
<td>Historical</td>
<td>3.0</td>
</tr>
<tr>
<td>3 Credits from courses designated with Course*Type: HS.SV</td>
<td></td>
</tr>
<tr>
<td>or 3 Credits from courses designated with Course*Type: SS.SV</td>
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</tr>
<tr>
<td>Interdisciplinary Perspectives</td>
<td>3.0</td>
</tr>
<tr>
<td>3 Credits from courses designated with Course*Type: ISP</td>
<td></td>
</tr>
<tr>
<td>Cultural Diversity and Global Understanding or</td>
<td>6.0</td>
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<tr>
<td>Foreign Language</td>
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<tr>
<td>and 3 Credits from courses designated with Course*Type: GU</td>
<td></td>
</tr>
<tr>
<td>or 6 Credits from the SAME foreign language</td>
<td></td>
</tr>
<tr>
<td>Experiential Education</td>
<td>0.0</td>
</tr>
<tr>
<td>One course designated with Course*Type: EX</td>
<td></td>
</tr>
<tr>
<td>Writing Intensive</td>
<td>0.0</td>
</tr>
<tr>
<td>Two courses from Chemistry (CE) designated with Course*Type: WT</td>
<td></td>
</tr>
<tr>
<td>Two courses from Education (ED, EDL, EDS) designated with Course*Type: WT</td>
<td></td>
</tr>
</tbody>
</table>

Minimum Credits for Bachelor of Science in Chemistry and Education with Endorsement in Secondary Education = 128.0

### ADDITIONAL ENDORSEMENTS AVAILABLE:
- TSD - Teacher of Students with Disabilities - Secondary
- ESL - English as a Second Language - Secondary

### NOTES:
* 58 credits must be completed at the 200 level or higher.
** Education majors are required to have an overall GPA of 2.75 for State Certification.
***By state regulation, all Education Majors seeking content area endorsement must complete 12+ credits at the 300+ level in the content major.