CHEMISTRY, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description
The Chemistry minor specifies a series of courses that together provide a broad introduction to the main thrusts of modern chemistry: general, organic, and physical. The Chemistry minor includes substantial laboratory work including general chemistry and either organic or physical chemistry. In addition, several advanced courses chosen by the student from a list of options are required.

What is Chemistry?
Chemistry is the study of matter and its transformations. Chemists seek a molecular-level understanding of the ways in which atoms combine to form molecules and bulk materials, how molecular structure and interactions lead to macroscopic material properties, and how chemical transformations can be used to create useful materials and store energy.

You Might Like This Program If...
• You are curious about why the materials you encounter in daily life have certain properties and interact in myriad ways.
• You want to use advanced instrumentation to measure the composition, behaviors, and properties of molecules, atoms, and materials.
• You want to help create new and better chemicals for personal care, medicine, construction, agriculture, or energy storage.

Program Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tr>
<td>Requirements for the Minor</td>
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Requirements for the Minor
A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Prescribed Courses: Require a grade of C or better</td>
<td></td>
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<tr>
<td>CHEM 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>Experimental Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 112</td>
<td>Chemical Principles II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 113</td>
<td>Experimental Chemistry II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 210</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 213</td>
<td>Laboratory in Organic Chemistry</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional Courses: Require a grade of C or better
Select one of the following: 4-6

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>CHEM 227</td>
<td>Analytical Chemistry</td>
</tr>
<tr>
<td>CHEM 450 &amp; CHEM 452</td>
<td>Physical Chemistry - Thermodynamics and Physical Chemistry - Quantum Chemistry</td>
</tr>
</tbody>
</table>
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