CHEMICAL ENGINEERING (B.S.CH.E.)

Required course work includes the university requirements (see regulation J-3 (https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/)) and:

Select one Communications Elective course
Select three Humanities and Social Science Elective courses:
Select one Economics Elective
Select one Mathematics Elective numbered 300 or greater  
Select 6 credits of Technical Electives in Math, Science, or Engineering numbered 300 or greater  

Total Hours  119

1 Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.
2 Technical Electives in Math, Science, or Engineering: must be numbered 300 or greater.

To be enrolled in upper-division CHE courses, a student majoring in chemical engineering must earn a grade of ‘C’ or better in each of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 223</td>
<td>Material and Energy Balances</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111 &amp; 111L</td>
<td>General Chemistry I and General Chemistry I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 112 &amp; 112L</td>
<td>General Chemistry II and General Chemistry II Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 210</td>
<td>Engineering Statics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 320</td>
<td>Engineering Thermodynamics and Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 335</td>
<td>Engineering Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 170</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 175</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 275</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MATH 310</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

Students transferring CHE 223 or its equivalent from a university without an ABET accredited chemical engineering program must pass a test on the subject matter of this course before enrolling in upper-division CHE courses.

In addition, a passing grade is required in each of the following courses before enrolling in upper-division CHE courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 123</td>
<td>Computations in Chemical Engineering</td>
<td>2</td>
</tr>
<tr>
<td>CHE 220</td>
<td>Programming for Chemical Engineers</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>Writing and Rhetoric II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>Engineering Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 212</td>
<td>Engineering Physics II</td>
<td>3</td>
</tr>
</tbody>
</table>

A GPA in CHE designated courses of at least 2.0 is required to graduate.

Courses to total 125 credits for this degree, not counting ENGL 101, any 398 (Internship), any 498 (Internship), any 598 (Internship), or mathematics courses numbered lower than MATH 170, and other courses that might be required to remove deficiencies.

Four-Year Plan

<table>
<thead>
<tr>
<th>Fall Term 1</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 111</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 111L</td>
<td>General Chemistry I Laboratory</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>Writing and Rhetoric II</td>
</tr>
<tr>
<td>ENGR 123</td>
<td>First Year Engineering</td>
</tr>
<tr>
<td>MATH 170</td>
<td>Calculus I</td>
</tr>
</tbody>
</table>
# Five-Year Plan

## Fall Term 1
- **ENGL 101**: Writing and Rhetoric I  
  3 hours
- **ENGR 123**: First Year Engineering  
  2 hours
- **MATH 143**: College Algebra  
  3 hours
- **MATH 144**: Precalculus II: Trigonometry  
  1 hour
- **Humanistic and Artistic Ways of Knowing Course**  
  3 hours
- **Oral Communication Course**  
  3 hours

## Fall Term 2
- **CHEM 111**: General Chemistry I  
  3 hours
- **CHEM 111L**: General Chemistry I Laboratory  
  1 hour
- **ENGR 210**: Engineering Statics  
  3 hours
- **MATH 175**: Calculus II  
  4 hours
- **ECON 201 or ECON 202**: International Course  
  3 hours

## Spring Term 1
- **CHEM 112**: General Chemistry II  
  4 hours
- **CHEM 112L**: General Chemistry II Laboratory  
  1 hour
- **MATH 175**: Calculus II  
  4 hours
- **PHYS 211**: Engineering Physics I  
  3 hours
- **PHYS 211L**: Laboratory Physics I  
  1 hour

## Spring Term 2
- **CHEM 223**: Organic Chemistry I  
  3 hours
- **CHEM 277**: Organic Chemistry II  
  3 hours
- **CHEM 278**: Organic Chemistry II Laboratory  
  1 hour
- **ENGR 320**: Engineering Thermodynamics and Heat Transfer  
  3 hours
- **ENGR 335**: Engineering Fluid Mechanics  
  3 hours
- **MATH 310**: Ordinary Differential Equations  
  3 hours

## Fall Term 3
- **CHEM 331**: Separation Processes I  
  3 hours
- **CHEM 340**: Transport and Rate Processes II  
  4 hours
- **CHEM 341**: Reactor Kinetics and Design  
  3 hours
- **UPDV Mathematics Elective Course**  
  3 hours
- **Oral Communication Course**  
  3 hours
- **American Diversity Course**  
  3 hours

## Spring Term 3
- **CHEM 323**: Chemical Engineering Thermodynamics  
  3 hours
- **CHEM 340**: Transport and Rate Processes I  
  4 hours
- **CHEM 341**: Reactor Kinetics and Design  
  3 hours
- **CHEM 342**: Chemical Engineering Thermodynamics  
  3 hours
- **CHEM 350**: Physical Chemistry  
  3 hours
- **CHEM 357**: Physical Chemistry Lab  
  1 hour
- **ECON 201 or ECON 202**: International Course  
  3 hours

## Fall Term 4
- **CHEM 112**: General Chemistry II  
  4 hours
- **CHEM 112L**: General Chemistry II Laboratory  
  1 hour
- **MATH 175**: Calculus II  
  4 hours
- **PHYS 211**: Engineering Physics I  
  3 hours
- **PHYS 211L**: Laboratory Physics I  
  1 hour

## Spring Term 4
- **CHEM 223**: Organic Chemistry I  
  3 hours
- **CHEM 277**: Organic Chemistry II  
  3 hours
- **CHEM 278**: Organic Chemistry II Laboratory  
  1 hour
- **ENGR 320**: Engineering Thermodynamics and Heat Transfer  
  3 hours
- **ENGR 335**: Engineering Fluid Mechanics  
  3 hours
- **MATH 310**: Ordinary Differential Equations  
  3 hours

## Fall Term 5
- **CHEM 112**: General Chemistry II  
  4 hours
- **CHEM 112L**: General Chemistry II Laboratory  
  1 hour
- **MATH 175**: Calculus II  
  4 hours
- **PHYS 211**: Engineering Physics I  
  3 hours
- **PHYS 211L**: Laboratory Physics I  
  1 hour

## Spring Term 5
- **CHEM 223**: Organic Chemistry I  
  3 hours
- **CHEM 277**: Organic Chemistry II  
  3 hours
- **CHEM 278**: Organic Chemistry II Laboratory  
  1 hour
- **ENGR 320**: Engineering Thermodynamics and Heat Transfer  
  3 hours
- **ENGR 335**: Engineering Fluid Mechanics  
  3 hours
- **MATH 310**: Ordinary Differential Equations  
  3 hours

- **Total Hours**: 129
The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar’s Office regarding your official degree/certificate completion status.

1. The student will apply aspects of engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

2. The student will identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

3. The student will develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

4. The student will communicate effectively with a range of audiences.