Chemistry, BS - Basic Chemistry Concentration

This curriculum meets the minimum university requirements for a major in chemistry.

- All College of Science degrees require at least 128 credit hours.
- Unless otherwise noted a C- or better is required for all College of Science prerequisite courses.
- 39 of those 128 credit hours must be taken at 300 level or higher.
- 12 credit hours of 300 level and above must be taken in the major or 6 credit hours in the major and 6 credit hours in the minor (if chosen).
- 12 of the last 18 credit hours must be taken at UAH, with an overall 25% of coursework taken at UAH.
- No more than 64 credit hours from a two-year college can be applied toward a UAH degree.

- For graduation application instructions, see here (http://catalog.uah.edu/undergrad/policies-procedures/application-graduation/).

Courses in organic chemistry completed at the junior college level may be used to satisfy semester hour and prerequisite requirements for upper level chemistry courses at UAH but do not count toward the 300-level requirements of the minor.

Charger Foundations

*Please see Area V for CoS requirements that can also be used to fulfill Charger Foundations Requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Semester Hours</th>
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<tbody>
<tr>
<td><strong>Area I: Freshman Composition</strong></td>
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<td>EH 101</td>
<td>COLLEGE WRITING I</td>
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<tr>
<td>or EH 101S</td>
<td>COLLEGE WRITING I W/STUDIO</td>
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<tr>
<td>EH 102</td>
<td>COLLEGE WRITING II</td>
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<td>EH 103</td>
<td>ACCELERATED COLLEGE WRITING</td>
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<td>EH 105</td>
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<td>ARH 101</td>
<td>ARH SUR: RENAISSANCE-MODERN</td>
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<td>DRAWING: FOUNDATIONS</td>
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<td>TH 122</td>
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<td>TH 123</td>
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<td>MU 100</td>
<td>INTRO TO MUSIC LITERATURE</td>
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<td>EH 208</td>
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<td>EH 242</td>
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<td>CM 113</td>
<td>Intro to Rhetorical Communication</td>
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<td>or WLC 101A</td>
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<td>or WLC 101F</td>
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<td>or WLC 101G</td>
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<tr>
<td>or WLC 101J</td>
<td>INTRO FOREIGN LANG I: JAPANESE</td>
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<tr>
<td>or WLC 101R</td>
<td>INTRO FOREIGN LANG I: RUSSIAN</td>
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<td>WLC 102S</td>
<td>INTRO FOREIGN LANG II: SPANISH</td>
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<td>MA 107</td>
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<td>MA 110</td>
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<td>MA 120</td>
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<td>AST 106</td>
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<tr>
<td>AST 107</td>
<td></td>
<td>EXPLORING THE COSMOS II</td>
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<td>BYS 215</td>
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<td>HUMAN ANATOMY &amp; PHYSIOLOGY I</td>
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<tr>
<td>CH 101</td>
<td></td>
<td>INTRO TO CHEMISTRY</td>
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<tr>
<td>&amp; CH 105</td>
<td></td>
<td>and INTRO CHEMISTRY LAB</td>
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<td>Code</td>
<td>Title</td>
<td>Semester Hours</td>
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<td>CH 123 &amp; CH 126</td>
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<td>CH 151 &amp; CH 105</td>
<td>GENERAL, ORGANIC, BIOCHEMISTRY and INTRO CHEMISTRY LAB</td>
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<td>ESS 103</td>
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<td>PH 100</td>
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<td>GENERAL PHYSICS I</td>
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<td>PH 102</td>
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<td>PH 112 &amp; PH 115</td>
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<td>PH 113 &amp; PH 116</td>
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**Area IV: History and Social and Behavioral Sciences**

**History**

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<tr>
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<td>HY 103</td>
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<tr>
<td>HY 104</td>
<td>WORLD HISTORY SINCE 1500</td>
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<tr>
<td>HY 221</td>
<td>UNITED STATES TO 1877</td>
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<tr>
<td>HY 222</td>
<td>UNITED STATES SINCE 1877</td>
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**Social and Behavioral Sciences**

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<tr>
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<td>PRINC OF MACROECONOMICS</td>
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<tr>
<td>ECN 143</td>
<td>PRINC OF MICROECONOMICS</td>
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<tr>
<td>GS 200</td>
<td>GLOBAL SYSTEMS AND CULTURES</td>
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<tr>
<td>ESS 105</td>
<td>WORLD REGIONAL GEOGRAPHY</td>
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<td>ESS 110</td>
<td>PRINCIPLES OF HUMAN GEOGRAPHY</td>
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<tr>
<td>PSC 101</td>
<td>INTRO TO AMERICAN GOVERNMENT</td>
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<td>PSC 102</td>
<td>INTRO TO COMPARATIVE POLITICS</td>
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<td>PSC 260</td>
<td>INTRODUCTION TO INTERNATIONAL RELATIONS</td>
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<td>PY 101</td>
<td>GENERAL PSYCHOLOGY I</td>
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<tr>
<td>PY 201</td>
<td>LIFE-SPAN DEVELOPMENT</td>
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<tr>
<td>SOC 100</td>
<td>INTRO TO SOCIOLOGY</td>
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<tr>
<td>SOC 102</td>
<td>ANALYSIS OF SOCIAL PROBLEMS</td>
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<tr>
<td>SOC 103</td>
<td>INTRO TO CRIMINOLOGY</td>
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* Take either 1 EH (Area II) + 2 HY (Area IV) <OR> 2 EH (Area II) + 1 HY (Area IV). Take no more than six hours in a single discipline in Area II or Area IV.

**Area V: College of Science Requirements**

<table>
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**Communications**

**Biology**

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<tr>
<td>BYS 119 &amp; 119L</td>
<td>PRINCIPLES OF BIOLOGY and LABORATORY</td>
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<tr>
<td>&amp; 119R</td>
<td>and RECITATION</td>
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<tr>
<td>BYS 120 &amp; 120L</td>
<td>ORGANISMAL BIOLOGY and ORGANISMAL BIOLOGY LAB</td>
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<tr>
<td>&amp; 120R</td>
<td>and RECITATION</td>
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## Major Requirements

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<tr>
<td>MA 171</td>
<td>CALCULUS A</td>
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<tr>
<td>MA 172</td>
<td>CALCULUS B</td>
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<tr>
<td><strong>Physics</strong></td>
<td>8</td>
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<tr>
<td>PH 111 &amp; PH 114</td>
<td>GEN PHYSICS W/CALCULUS I and GENERAL PHYSICS LAB I</td>
<td></td>
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<tr>
<td>&amp; PH 112 &amp; PH 115</td>
<td>GEN PHYSICS W/CALC II and GENERAL PHYSICS LAB II</td>
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<tr>
<td><strong>Computer Science: Choose one</strong></td>
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<tr>
<td>CS 100 or CS 102 or CS 103 or CS 104</td>
<td>INTRO COMPUTERS &amp; PROGRAM or INTRO TO C PROGRAMMING or INTRO PROGRAMMING USING JAVA or INTRO TO CS USING PYTHON</td>
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<tr>
<td><strong>Technical Writing</strong></td>
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<td>EH 301</td>
<td>TECHNICAL WRITING</td>
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## Chemistry

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<td>CH 123 &amp; CH 126</td>
<td>GENERAL CHEMISTRY II and GENERAL CHEMISTRY LAB II</td>
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<tr>
<td>CH 223 &amp; CH 224</td>
<td>QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB</td>
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<td>CH 331 &amp; CH 335</td>
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<td>CH 332</td>
<td>ORGANIC CHEMISTRY II</td>
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<td>CH 361</td>
<td>GENERAL BIOCHEMISTRY</td>
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<td>CH 401</td>
<td>INORGANIC CHEMISTRY</td>
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## Basic Chemistry Courses

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<td>CH 345</td>
<td>EXPERIMENTAL PHYSICAL CHEM I</td>
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<td>CH 421</td>
<td>INSTRUMENTAL ANALYSIS</td>
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<td>CH 341 &amp; CH 342</td>
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<tr>
<td>CH 347 &amp; CH 348</td>
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## Elective Requirements

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<td><strong>Elective Courses</strong></td>
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<tr>
<td>Additional elective courses, 100+ level, to reach 128 credits. Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credits of 100 level HPE courses can count toward degree requirements.</td>
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Overall Requirements

All College of Science degrees must have at least 128 credits.

At least 39 of the 128 credits must be at the 300+ level. These may be taken in any area including electives.

<table>
<thead>
<tr>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

1. Students must take one literature and one history course. Students must also take either a second literature or history course to complete a sequence. Acceptable Literature sequences must include one early literature (EH 207 or EH 242 or EH 209) and one later literature (EH 208 or EH 210). Acceptable history sequences are (HY 103 + HY 104), or (HY 221 + HY 222).

2. Based on Math placement (http://www.uah.edu/science/departments/math/undergraduate-students/placement/), prerequisite (MA 112 and/or MA 113) Mathematics courses may be required.

3. No more than 6 hours can be taken in a single discipline.

4. For choices see the World Languages and Cultures (http://catalog.uah.edu/undergrad/colleges-departments/arts-humanities-social-sciences/foreign-languages-literatures/#coursestext) department.

5. Courses in organic chemistry completed at the 2-year college level may be used to satisfy semester hour and prerequisite requirements for upper level chemistry courses at UAH but do not count toward the 300-level requirements of the minor.

Note: This is only an example and variations are possible, but please work with your advisor as some courses are only offered 1 semester out of the academic year.

Year 1

Fall

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<td>EH 101</td>
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<td>MA 171</td>
<td>CALCULUS A</td>
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<td>CH 121 &amp; CH 125</td>
<td>GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB I</td>
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<td>BYS 119 &amp; 119L &amp; 119R</td>
<td>PRINCIPLES OF BIOLOGY and LABORATORY and RECITATION</td>
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Term Semester Hours: 16

Spring

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<tr>
<td>BYS 120 &amp; 120L &amp; 120R</td>
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<td>Elective</td>
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</table>

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

Term Semester Hours: 16

Year 2

Fall

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<tr>
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<td>CM 113</td>
<td>Intro to Rhetorical Communication</td>
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<td>Literature</td>
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See Requirements tab for approved list.

Elective 2
Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

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<tr>
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### Spring

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<td>&amp; PH 115</td>
<td>and GENERAL PHYSICS LAB II</td>
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<td>CH 332</td>
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<td>&amp; CH 336</td>
<td>and ORGANIC CHEMISTRY LAB II</td>
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<td>CH 223</td>
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<td>&amp; CH 224</td>
<td>and QUANTITATIVE ANALYSIS LAB</td>
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</table>

Fine Art

- See Requirements tab for approved list.

Elective

- Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

### Year 3

#### Fall

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CH 341</td>
<td>PHYSICAL CHEMISTRY I</td>
<td>3</td>
</tr>
<tr>
<td>or CH 347</td>
<td>or BIOPHYSICAL CHEMISTRY I</td>
<td></td>
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<tr>
<td>CH 345</td>
<td>EXPERIMENTAL PHYSICAL CHEMISTRY I</td>
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</tbody>
</table>

History

- See Requirements tab for approved list.

Social and Behavioral science

- See Requirements tab for approved list.

Humanities, 2nd Fine art or 2nd Literature

- See Requirements tab for approved list.

Elective

- Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 342</td>
<td>PHYSICAL CHEMISTRY II</td>
<td>3</td>
</tr>
<tr>
<td>or CH 348</td>
<td>or BIOPHYSICAL CHEMISTRY II</td>
<td></td>
</tr>
<tr>
<td>CH 361</td>
<td>GENERAL BIOCHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>CS 100</td>
<td>INTRO COMPUTERS PROGRAM</td>
<td>3</td>
</tr>
<tr>
<td>or CS 102</td>
<td>or INTRO TO C PROGRAMMING</td>
<td></td>
</tr>
<tr>
<td>or CS 103</td>
<td>or INTRO PROGRAMMING USING JAVA</td>
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</tr>
<tr>
<td>or CS 104</td>
<td>or INTRO TO CS USING PYTHON</td>
<td></td>
</tr>
</tbody>
</table>

Social and Behavioral science

- See Requirements tab for approved list.

History

- See Requirements tab for approved list.

Elective 300+ level or higher course (ex: CH 362 or CH 346)

- 1
### Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CH 401</td>
<td>INORGANIC CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>CH 421</td>
<td>INSTRUMENTAL ANALYSIS</td>
<td>4</td>
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<tr>
<td>Elective</td>
<td>300+ level or higher course</td>
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<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

**Term Semester Hours:** 16

### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH 301</td>
<td>TECHNICAL WRITING</td>
<td>3</td>
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<tr>
<td>Elective</td>
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</tr>
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<td>Elective</td>
<td>300+ level or higher course (ex: CH 402)</td>
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<tr>
<td>Elective</td>
<td></td>
<td>3</td>
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<tr>
<td>Elective</td>
<td></td>
<td>3</td>
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</tbody>
</table>

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

**Term Semester Hours:** 16

**Total Semester Hours:** 128