CHEMISTRY B.A.

The courses required for the B.A. degree provide a less extensive training in chemistry than do the courses required for the American Chemical Society certified B.S. degree. This is to allow the student to supplement his or her program with courses that meet his or her specific needs. Thus this degree provides the core of traditional preparation in chemistry together with latitude for combination with an interdisciplinary field or the Teacher Preparation program. It is strongly advised that students using this degree obtain faculty advice in planning their program.

Bachelor of Arts - Chemistry

College Humanities & Sciences

Degree Specific Credits: 89

Required Cumulative GPA: 2.0

Catalog Year: 2017-2018

General Education Requirements

Information regarding these requirements can be found in the General Education Section (http://catalog.umt.edu/academics/general-education-requirements) of the catalog.

Summary

Lower Core Courses  45
  General Chemistry
  Organic Chemistry
  Physics
  Mathematics
  Computer Science

Upper Core Courses  16
  Analytical Chemistry
  Physical Chemistry

Advanced Electives  15
  Modern Foreign Language  10
  Ethics  3

Total Hours  89

Lower Core Courses

Rule: All subcategories must be completed

General Chemistry

Rule: Complete both courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMY 141N &amp; CHMY 142N</td>
<td>College Chemistry I and College Chemistry I Lab</td>
<td>5</td>
</tr>
<tr>
<td>CHMY 143N &amp; CHMY 144N</td>
<td>College Chemistry II and College Chemistry II Lab</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Hours  10

Minimum Required Grade: C-

Organic Chemistry

Rule: Complete all courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMY 221</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHMY 222</td>
<td>Organic Chemistry I Lab</td>
<td>2</td>
</tr>
<tr>
<td>CHMY 223</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHMY 224</td>
<td>Organic Chemistry II Lab</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Hours  10

Minimum Required Grade: C-

Physics

Rule: Complete either PHSX 205N-PHSX 206N and PHSX 207N-PHSX 208N or PHSX 215N-PHSX 216N and PHSX 217N-PHSX 218N

Select one of the following physics sequences:  10

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSX 205N &amp; PHSX 206N</td>
<td>College Physics I and College Physics I Laboratory</td>
<td></td>
</tr>
<tr>
<td>PHSX 207N &amp; PHSX 208N</td>
<td>College Physics II and College Physics II Laboratory</td>
<td></td>
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</tbody>
</table>

OR

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSX 215N &amp; PHSX 216N</td>
<td>Fund of Physics w/Calc I and Physics Laboratory I w/Calc</td>
<td></td>
</tr>
<tr>
<td>PHSX 217N &amp; PHSX 218N</td>
<td>Fund of Physics w/Calc II and Physics Laboratory II w/Calc</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours  10

Minimum Required Grade: C-

Mathematics

Rule: Complete all courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 171</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>M 172</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>M 273</td>
<td>Multivariable Calculus</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Hours  12

Minimum Required Grade: C-

Computer Science

Rule: Complete course

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 250</td>
<td>Computer Mding/Science Majors</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours  3

Minimum Required Grade: C-

Upper Core Courses

Rule: All subcategories must be completed

Analytical Chemistry

Rule: Complete all of the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMY 311</td>
<td>Analytical Chem-Quant Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHMY 421</td>
<td>Advanced Instrument Analysis</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Hours  8

Minimum Required Grade: C-

Physical Chemistry

Rule: Complete all of the following courses
CHMY 371  Phys Chem-Qntm Chm & Spctrscpy  4
CHMY 373  Phys Chem-Kntcs & Thrmdynmcs  4
Total Hours  8

Minimum Required Grade: C-

Advanced Electives
Rule: Complete 15 credits of advanced electives
Note: Complete 15 credits of advanced electives approved by Chemistry Adviser
Minimum Required Grade: C-
15 Total Credits Required

Modern Foreign Language
Rule: Complete 10 credits of modern foreign language
Minimum Required Grade: Pass
10 Total Credits Required

Ethics
Rule: Complete the following course
CHMY 305E  Ethics, Literature and Writing in the Sciences  3
Total Hours  3
Minimum Required Grade: C-

Teaching Chemistry Concentration
To sign up for this option, you need to contact the Curriculum and Instruction Department. Do not fill out a major/minor form for graduation or the major/minor/concentration section of the major change form. Approvals for this option must come from the Curriculum and Instruction Department.

Concentrations will not appear on your UM transcript, diploma, university lists, student data system, or university publication and are used for advising purposes only. You do not fill out a major change for a concentration.

Individuals interested in teaching in K-12 schools must complete a degree in the content area they want to teach plus the teacher preparation program through the Department of Curriculum and Instruction. Individuals must complete the teaching major/teaching concentration within that degree program, which may contain different course requirements than the academic major since the sequence of courses is designed to meet state standards. Upon completion of the degree program with the teaching concentration and the secondary licensure program, one will be eligible for a standard Montana teaching license in this content area.

- Secondary Education Licensure Program (http://www.coehs.umt.edu/departments/currinst/undergradprograms/seced/default.php)

Teaching Preparation Requirements
Rule: Complete both of the following
Note: The EDU 497 course number is used for multiple courses. Students should register for EDU 497 Methods: 5-12 Science.
EDU 497  Teaching and Assessing  3
ENST 472  Gen Sci: Conservation Education  3
Total Hours  6
Minimum Required Grade: C-

Teaching Licensure Requirements
Note: Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Curriculum & Instruction (catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning) in the College of Education and Human Sciences (catalog.umt.edu/colleges-schools-programs/education-human-sciences) for more information. A major GPA of 2.75 is required to be eligible for student teaching.