COMPUTER SCIENCE B.S.
Bachelor of Science - Computer Science

College Humanities & Sciences

Degree Specific Credits: 87
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
Computer Science Core Courses 33
Degree Electives 18
Communication 3
Mathematics 18
Science Core 8-10
Biology
Chemistry
Physics
Science Electives 6-10
Total Hours 86-92

Computer Science Core Courses
Rule: Must complete all of the following courses:

Note: 100-level CSCI courses other than CSCI 106, CSCI 135-CSCI 136, and 200-level CSCI courses other than CSCI 205 and CSCI 232 do not count toward the degree or track requirements. However, they do count in the 60 credit limit in the major.

CSCI 315E will fulfill the upper division writing requirement.

CSCI 106  Careers in Computer Science 1
CSCI 135  Fund of Computer Science I 3
or CSCI 250  Computer Mdlng/Science Majors
CSCI 136  Fund of Computer Science II 3
CSCI 205  Programming Languages w/ C/C++ 4
CSCI 232  Data Structures and Algorithms 4
CSCI 315E  Computers, Ethics, and Society 3
CSCI 323  Software Science 3
CSCI 332  Design/Analysis of Algorithms 3
CSCI 361  Computer Architecture 3
CSCI 426  Adv Prgrmng Theory/Practice I 3
CSCI 427  Adv Prgrmng Theory/Practice II 3
Total Hours 33
Minimum Required Grade: C-

Degree Electives
Rule: Must complete 18 credits from the following courses

Note: A total of at most 3 of the 18 credits of CS electives may be in CSCI 398 or CSCI 498.

Select 18 credits from the following: 18
CSCI 340  Database Design
CSCI 390  Research
CSCI 391  Special Topics
CSCI 394  Seminar
CSCI 398  Internship
CSCI 411  Advanced Web Programming
CSCI 412  Game and Mobile App
CSCI 441  Computer Graphics Programming
CSCI 443  User Interface Design
CSCI 444  Data Visualization
CSCI 446  Artificial Intelligence
CSCI 447  Machine Learning
CSCI 448  Pattern Recognition
CSCI 451  Computational Biology
CSCI 460  Operating Systems
CSCI 466  Networks
CSCI 477  Simulation
CSCI 490  Research
CSCI 491  Special Topics
CSCI 494  Seminar
CSCI 498  Internship
CSCI 499  Senior Thesis/Capstone

Total Hours 18
Minimum Required Grade: C-

Communication
Rule: Must complete 1 of the following courses

Note: COMX 242 is a repeat of COMX 111A.

Select 3 credits from the following: 3
COMX 111A  Intro to Public Speaking
or COMX 242  Argumentation

Total Hours 3
Minimum Required Grade: C-

Mathematics
Rule: Take the following:

Note: M 172 and M 225 may be replaced by M 171 and M 221.

Select 3 of the following: 3
M 171  Calculus I 4
M 172  Calculus II 4
M 221  Introduction to Linear Algebra 4
M 225  Introduction to Discrete Mathematics 3
STAT 341  Introduction to Probability and Statistics 3

Total Hours 18
Minimum Required Grade: C-
**Science Core**

**Rule:** Must complete 1 of the following subcategories of science sequences

9-10 Total Credits Required

**Biology**

**Rule:** May complete the following sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB 160N</td>
<td>Principles of Living Systems</td>
<td>3</td>
</tr>
<tr>
<td>BIOB 161N</td>
<td>Pncpls of Living Systems Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOB 170N</td>
<td>Princpls Biological Diversity</td>
<td>3</td>
</tr>
<tr>
<td>BIOB 171N</td>
<td>Princpls Biological Dvrsty Lab</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Minimum Required Grade: C-

**Chemistry**

**Rule:** May complete the following sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</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>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

Minimum Required Grade: C-

**Physics**

**Rule:** May complete the following sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSX 215N</td>
<td>Fund of Physics w/Calc I</td>
<td>4</td>
</tr>
<tr>
<td>PHSX 216N</td>
<td>Physics Laboratory I w/Calc</td>
<td>1</td>
</tr>
<tr>
<td>PHSX 217N</td>
<td>Fund of Physics w/Calc II</td>
<td>4</td>
</tr>
<tr>
<td>PHSX 218N</td>
<td>Physics Laboratory II w/Calc</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

Minimum Required Grade: C-

**Science Electives**

**Rule:** Must complete 2 of the following courses

**Note:** The Biology, Chemistry, or Physics sequence chosen to fulfill the science core may not count toward the science electives requirement.

Laboratory courses must be taken in conjunction with their associated lecture course.

Select two of the following: 6-10

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMY 141N</td>
<td>College Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHMY 143N</td>
<td>College Chemistry II</td>
<td></td>
</tr>
<tr>
<td>FORS 201</td>
<td>Forest Biometrics</td>
<td></td>
</tr>
<tr>
<td>GEO 101N &amp; GEO 102N</td>
<td>Introduction to Physical Geology Lab</td>
<td></td>
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<tr>
<td>GEO 225</td>
<td>Earth Materials</td>
<td></td>
</tr>
<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>
<tr>
<td>PHSX 343 &amp; PHSX 444</td>
<td>Modern Physics and Advanced Physics Lab</td>
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</tbody>
</table>

This is an advising track only and not an official program as recognized by the University of Montana (UM) or the Montana University System. This information will not appear on your UM transcript, diploma, university lists, student data system, or university publication. You do not fill out a major change for a track. After completion of this track the student will be awarded a Bachelor of Science in Computer Science.