AQUATIC WILDLIFE BIOLOGY

Chad Bishop, Wildlife Biology Director

The Wildlife Biology Program combines the best features of a liberal arts curriculum with scientific preparation in wildlife conservation. The Program provides students with an extensive knowledge in ecology, population biology, conservation biology, and critical thinking and quantitative skills. Our students receive a strong academic and scientific background with an emphasis on hands-on, experiential learning. The educational requirements for certification by The Wildlife Society can be met within the framework of the undergraduate program.

While some employment opportunities exist in wildlife conservation for students with the baccalaureate degree, we encourage students to continue their education through the master’s degree to qualify for most state, federal, and private positions.

Two concentrations are offered in the Wildlife Biology Program: terrestrial and aquatic. They both follow the same schedule of courses for the freshman and most of the sophomore year and then pursue different curricula for the last two years. Each leads to a B.S. in Wildlife Biology. The University is well-suited for instruction in wildlife biology because of the excellent opportunities for field instruction and research at Lubrecht Experimental Forest, Flathead Lake Biological Station, and the Theodore Roosevelt Memorial and Bandy ranches. The Montana Forest and Conservation Experiment Station, the Division of Biological Sciences, and the Montana Cooperative Wildlife Research Unit facilitate research.

High School Preparation: In addition to general University admission requirements, the student should elect four years of mathematics and three years of science, including biology, chemistry and physics.

Wildlife Biology Honors Track

The honors curriculum is designed particularly for students with strong academic records who intend to do graduate work. Entrance into this emphasis is open only to students who, at the beginning of the junior year of the wildlife biology program, have a grade-point average of 3.5 or above and who petition the faculty for entrance.

Honors students must complete either WILD 370, WILD 470 and WILD 494 (terrestrial option) or BIOO 340, BIOE 428 and WILD 494 (aquatic option). Honors students are encouraged to enroll also in WILD 499. The balance of the coursework for the junior and senior years will be developed in consultation with the honors student’s faculty advisor.

All students in the honors emphasis are required to meet with their faculty advisor prior to autumn semester registration of their junior and senior years to work out their course schedules.

Bachelor of Science - Wildlife Biology; Aquatic Concentration

W.A Franke College of Forestry & Conservation

Degree Specific Credits: 84

Required Cumulative GPA: 2.5

Catalog Year: 2017-2018

Note: Experiential Learning is required - Students have several options to fulfill this requirement - list is available from the Wildlife Advisor in Forestry 103C

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

Major Required Courses 20-21
Outside Major Required Courses 24-26
Major Required Courses 46
Writing Requirement 12-18
Mathematics Requirement 4
Symbolic Systems 8
Expressive Arts 3
Natural Sciences Requirement 12
Total Hours 129-138

Major Required Courses

Rule: Must take all courses

Note: Can take WRIT 325 (Honors) in place of NRSM 200

One out of the four is required: BIOE 406/BIOE 409, BIOM 427/BIOM 428, BIOO 462, WILD 485

Select one of the following: 3-4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOE 406</td>
<td>Behavior &amp; Evolution</td>
</tr>
<tr>
<td>&amp; BIOE 409</td>
<td>and Behavior &amp; Evolution Discussion</td>
</tr>
<tr>
<td>BIO 427</td>
<td>General Parasitology</td>
</tr>
<tr>
<td>&amp; BIO 428</td>
<td>and General Parasitology Lab</td>
</tr>
<tr>
<td>BIO 462</td>
<td>Entomology</td>
</tr>
<tr>
<td>WILD 485</td>
<td>Aquatic Invertebrate Ecology</td>
</tr>
<tr>
<td>BIOB 160N</td>
<td>Principles of Living Systems</td>
</tr>
<tr>
<td>BIOB 161N</td>
<td>Prncpls of Living Systems Lab</td>
</tr>
<tr>
<td>BIOB 260</td>
<td>Cellular and Molecular Biology</td>
</tr>
<tr>
<td>BIOB 272</td>
<td>Genetics and Evolution</td>
</tr>
<tr>
<td>NRSM 200</td>
<td>Nat.Resource Professional Wrtg</td>
</tr>
<tr>
<td>or WRIT 325</td>
<td>Science Writing</td>
</tr>
<tr>
<td>WILD 180</td>
<td>Careers in Wildlife Biology</td>
</tr>
</tbody>
</table>

Total Hours 20-21

Minimum Required Grade: C-

Outside Major Required Courses

Rule: Must take all courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOE 406</td>
<td>Behavior &amp; Evolution</td>
</tr>
<tr>
<td>&amp; BIOE 409</td>
<td>and Behavior &amp; Evolution Discussion</td>
</tr>
<tr>
<td>BIOM 427</td>
<td>General Parasitology</td>
</tr>
<tr>
<td>&amp; BIOM 428</td>
<td>and General Parasitology Lab</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>BIOO 462</td>
<td>Entomology</td>
</tr>
<tr>
<td>WILD 485</td>
<td>Aquatic Invertebrate Ecology</td>
</tr>
<tr>
<td>CHMY 121N</td>
<td>Introduction to General Chemistry</td>
</tr>
<tr>
<td>CHMY 123</td>
<td>Introduction to Organic and Biochemistry</td>
</tr>
<tr>
<td>CHMY 124</td>
<td>Introduction to Organic and Biochemistry Lab</td>
</tr>
<tr>
<td>COMX 111A</td>
<td>Intro to Public Speaking</td>
</tr>
<tr>
<td>M 162</td>
<td>Applied Calculus</td>
</tr>
<tr>
<td>NRSM 200</td>
<td>Nat. Resource Professional Wrtg</td>
</tr>
<tr>
<td>STAT 216 or WILD 240</td>
<td>Introduction to Statistics or Intro to Biostatistics</td>
</tr>
<tr>
<td>WRIT 101</td>
<td>College Writing I</td>
</tr>
</tbody>
</table>

Total Hours: 39-40

Minimum Required Grade: C-

### Major Required Courses

**Rule:** Must take all courses

- BIOE 370 General Ecology 3
- BIOE 371 Gen Ecology Lab (equiv to 271) 2
- BIOE 428 Freshwater Ecology 5
- BIOM 427 General Parasitology 2
- BIOM 428 General Parasitology Lab 2
- BIOO 320 General Botany 5
- BIOO 340 Biology and Mgmnt of Fishes 4
- BIOO 462 Entomology 4
- NRSM 385 Watershed Hydrology 3
- WILD 346 Wildlife Physiological Ecology 3
- WILD 408 Advanced Fisheries 3
- WILD 410 Wildlife Policy & Biopolitics 3 or NRSM 422 Nat Res Policy/Administration
- WILD 480 The Upshot--Appld Wildlife Mgt 3
- WILD 485 Aquatic Invertebrate Ecology 3
- WILD 494 Senior Wildlife Seminar 1

Total Hours: 46

Minimum Required Grade: C-

### Writing Requirement

**Rule:** Must complete the following subcategories

12-18 Total Credits Required

#### Lower Division Writing

**Rule:** Complete all of the following courses

- WRIT 101 College Writing I 3

Select one of the following:

- NRSM 200 Nat. Resource Professional Wrtg 3
- WRIT 325 Science Writing (honors) 3
- WRIT 201 College Writing II 6

Total Hours: 6

Minimum Required Grade: C-

### Upper Division Writing

**Rule:** Must take all courses

- BIOE 371 Gen Ecology Lab (equiv to 271) 2

Select two of the following:

- BIOE 428 Freshwater Ecology 2
- BIOO 320 General Botany 2
- BIOO 470 Ornithology 2
- BIOO 475 Mammalogy 2
- WILD 408 Advanced Fisheries 2
- WILD 470 Conserv of Wildlife Populatns 2
- WILD 499 Thesis 2

Total Hours: 6-12

Minimum Required Grade: C-

### Mathematics Requirement

**Rule:** Must take the following course

- M 162 Applied Calculus 4

Total Hours: 4

Minimum Required Grade: C-

### Exception to the Modern/Classical Languages Requirement

**Rule:** The Wildlife Biology major has been granted an exception to the Modern/Classical Language Requirement. Must take one of the following courses to will satisfy this requirement.

Must take one of the following: 3-4

- M 162 Applied Calculus 4
- STAT 216 Introduction to Statistics 3
- WILD 240 Intro to Biostatistics 3

Total Hours: 3-4

Minimum Required Grade: C-

### Expressive Arts

**Rule:** Must take the following course

- COMX 111A Intro to Public Speaking 3

Total Hours: 3

Minimum Required Grade: C-

### Natural Sciences Requirement

**Rule:** Must take all courses

- BIOB 160N Principles of Living Systems 3
- BIOB 161N Prncpls of Living Systems Lab 1
- CHMY 121N Introduction to General Chemistry 3
- CHMY 123 Introduction to Organic and Biochemistry 3
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMY 124</td>
<td>Introduction to Organic and Biochemistry Lab</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Hours**: 12

Minimum Required Grade: C-