

# B.S. IN ENVIRONMENTAL SCIENCE

| Code                                                             | Title                                                                                                                    | Credits      |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Major in Environmental Science (B.S.)</b>                     |                                                                                                                          |              |
| BIO 124<br>& BIO 124D                                            | Integrative Biology: Genes, Cells, Change<br>and Integrative Biology: Genes, Cells, Change Lab                           | 4            |
| BIO 128<br>& BIO 128D                                            | Integrative Biology: Metabolism, Energy, Biodiversity<br>and Integrative Biology: Metabolism, Energy, Biodiversity Lab   | 4            |
| BIO 218                                                          | Biology in a Changing World                                                                                              | 3            |
| BIO 495                                                          | Biology Seminar                                                                                                          | 2            |
| CHE 113<br>& CHE 113D                                            | General Chemistry I<br>and General Chemistry I Lab                                                                       | 4            |
| CHE 214<br>& CHE 215                                             | General Chemistry II<br>and General Chemistry II Lab                                                                     | 4            |
| CHE 312<br>& CHE 313                                             | Quantitative Analysis<br>and Quantitative Analysis Lab                                                                   | 4            |
| ENS 104<br>& ENS 104D                                            | Environment and Humanity<br>and Environment and Humanity Lab                                                             | 4            |
| ENS 330<br>& ENS 331                                             | Ecology<br>and Ecology Lab <sup>6</sup>                                                                                  | 4            |
| ENS 399                                                          | Introduction to Research                                                                                                 | 2            |
| ENS 499                                                          | Symposium                                                                                                                | 0            |
| <b>Choose an applied experience:</b>                             |                                                                                                                          | <b>2-4</b>   |
| ENS 481                                                          | Internship in Environmental Science                                                                                      |              |
| or                                                               |                                                                                                                          |              |
| ENS 496                                                          | Research in Environmental Science                                                                                        |              |
| ENS/BIO 497                                                      | Advanced Research in Environmental Science                                                                               |              |
| <b>Choose one course from the following:</b>                     |                                                                                                                          | <b>4-5</b>   |
| ENS 318KZ<br>& ENS 496                                           | Ecology in the Tropics: Natural History and Future Prospects<br>and Research in Environmental Science <sup>1, 5, 8</sup> |              |
| ENS 335K                                                         | Environmental Ethics                                                                                                     |              |
| GEO/HIS 320K                                                     | History and the Human Environment                                                                                        |              |
| GES 326K                                                         | Plants and People                                                                                                        |              |
| <b>Choose three of the following Environmental Area Courses:</b> |                                                                                                                          | <b>12-13</b> |
| BIO 328<br>& BIO 329                                             | Invertebrate Biology<br>and Invertebrate Biology Lab                                                                     |              |
| BIO 342<br>& BIO 343                                             | Aquatic Biology<br>and Aquatic Biology Lab                                                                               |              |
| BIO 346<br>& BIO 347                                             | Animal Behavior<br>and Animal Behavior Lab                                                                               |              |
| BIO 372<br>& BIO 373                                             | Plant Taxonomy and Ecology<br>and Plant Taxonomy and Ecology Lab                                                         |              |
| BIO 380<br>& BIO 383                                             | Environmental Plant Biology<br>and Environmental Plant Biology Lab <sup>6</sup>                                          |              |
| ENS 316<br>& ENS 317                                             | Wildlife Ecology<br>and Wildlife Ecology Lab                                                                             |              |

|                        |                                                                                                                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------|
| ENS 318KZ<br>& ENS 496 | Ecology in the Tropics: Natural History and Future Prospects<br>and Research in Environmental Science <sup>1, 5, 8</sup> |
|------------------------|--------------------------------------------------------------------------------------------------------------------------|

Courses from the Au Sable Institute of Environmental Studies

**Choose one of the following:** **3-4**

|                      |                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------|
| BIO 234<br>& BIO 235 | Microbiology<br>and Microbiology Lab                                                         |
| BIO 326<br>& BIO 327 | Vertebrate Histology<br>and Vertebrate Histology Lab                                         |
| BIO 332<br>& BIO 333 | Genetics<br>and Genetics Lab                                                                 |
| BIO 338<br>& BIO 339 | Endocrinology<br>and Endocrinology Lab                                                       |
| BIO 354<br>& BIO 355 | Cell Biology<br>and Cell Biology Lab <sup>3, 6</sup>                                         |
| BIO 358<br>& BIO 359 | Neurobiology<br>and Neurobiology Lab                                                         |
| BIO 368<br>& BIO 369 | Structure and Development of Vertebrates<br>and Structure and Development of Vertebrates Lab |
| BIO 376<br>& BIO 377 | Animal Physiology<br>and Animal Physiology Lab                                               |
| CHE 304<br>& CHE 397 | Essentials of Biochemistry<br>and Biochemistry II Lab <sup>4, 7</sup>                        |
| CHE 320              | Instrumental Analysis                                                                        |
| CHE 388<br>& CHE 389 | Biochemistry I<br>and Biochemistry I Lab <sup>2</sup>                                        |

**Au Sable Institute Courses** **12**

BIOL/GEOL/GEOG 301 Land Resources

BIOL/ENVST/GEOG 330 Geographic Information Systems

Au Sable Elective

| Code                 | Title | Credits    |
|----------------------|-------|------------|
| Major                |       | 68-73      |
| General Education *  |       | 40-48      |
| Electives            |       | 6-9        |
| <b>Total Credits</b> |       | <b>122</b> |

<sup>1</sup> Recommended option to complete the major in 3.5 years.

<sup>2</sup> CHE 226/CHE 227 is a prerequisite for this course.

<sup>3</sup> CHE 224/CHE 225 is a prerequisite for this course.

<sup>4</sup> Students requiring CHE 397 for their degree will require an override to take this course concurrently with CHE 304.

<sup>5</sup> When taken with ENS 318KZ, ENS 496 does not count toward the research option in the applied experience.

<sup>6</sup> This is a designated research course.

<sup>7</sup> CHE 224/CHE 225 is a prerequisite for CHE 304.

<sup>8</sup> GES 104 is a prerequisite for ENS 318KZ.

\* Courses whose number is followed by a letter fulfill a General Education requirement.

With permission of the Department Chair, appropriate courses taken in other off-campus programs may substitute for those listed above.

Students are strongly urged to meet the "M" tag (Mathematics) General Education requirement by taking an introductory statistics course such as PSY 230M or MAT 207M.

Students may not declare a B.S. in Environmental Science and a Minor in Environmental Studies.