To be adopted:
Proposed change in course requirements for the Bachelor of Science (B.S) and Bachelor of Arts (B.A.) degree in Environmental Sciences.

PRESENT

Major Requirements

The major requirements for both the B.A. and the B.S. degrees in Environmental Sciences are as follows: Students must fulfill the core courses listed under the lower-division and upper-division requirements with a grade point average of 2.0 or better and no grade lower than a C-. If a grade of D or F is received in 2 or more core courses required for the major, either in separate courses or repetitions of the same course, the student may be discontinued from the major. Students must, under such circumstances, petition the department to remain in the major. Students are also required to choose one of the options and satisfactorily complete the option requirements.

Note To gain maximum benefit from participating in the Undergraduate Research and Environmental Internship Programs, students intending to enroll in ENSC 197 and ENSC 198-I should contact their advisor during the quarter prior to enrollment in these courses.

PROPOSED

Major Requirements

The major requirements for both the B.A. and the B.S. degrees in Environmental Sciences are as follows: Students must fulfill MATH 8B or 9A; MATH 9B; CHEM 1A, 1B, 1C; BIOL 5A or 2; BIOL 5B or 3; ENSC 1, 2, 6 or 143A, 100, 101, and 102 with a grade point average of 2.0 or better and no grade lower than a C-. If a grade lower than a C- is received in 2 or more of these classes, either in separate courses or repetitions of the same course, the student may be discontinued from the major. Students must, under such circumstances, petition the department to remain in the major. Students are also required to choose one of the options and satisfactorily complete the option requirements. Students in Environmental Sciences are required to demonstrate adequate progress towards earning the degree. Adequate progress is defined as completion of MATH 9B prior to the beginning of the Winter Quarter of the second year of residence or Junior standing (>90 units) and at least one course from ENSC 100, 101, or 102 must be completed prior to the end of the third year of residence or senior standing (>135 units).

Note To gain maximum benefit from participating in the Undergraduate Research and Environmental Internship Programs, students intending to enroll in ENSC 197 and ENSC 198-I should contact their advisor during the quarter prior to enrollment in these courses.
<table>
<thead>
<tr>
<th>Core Requirements</th>
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</thead>
<tbody>
<tr>
<td>1. Lower-division requirements (41-42 units)</td>
<td>[No Change]</td>
</tr>
<tr>
<td>a) ENSC 001, ENSC 002</td>
<td>[No Change]</td>
</tr>
<tr>
<td>b) CHEM 001A, CHEM 001B, CHEM 001C,</td>
<td>[No Change]</td>
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<tr>
<td>CHEM 01LA, CHEM 01LB, CHEM 01LC</td>
<td>[No Change]</td>
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<tr>
<td>c) MATH 005 or MATH 008A, MATH 008B or MATH 009A, MATH</td>
<td>[No Change]</td>
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<tr>
<td>009B</td>
<td>[No Change]</td>
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<tr>
<td>d) POSC 010</td>
<td>[No Change]</td>
</tr>
<tr>
<td>2. Upper-division requirements (14 units):</td>
<td>[No Change]</td>
</tr>
<tr>
<td>ENSC 100/SWSC 100, ENSC 101, ENSC 102, ENSC 191</td>
<td>[No Change]</td>
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</tbody>
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**Environmental Toxicology Option (70-79 units)**

<table>
<thead>
<tr>
<th>Environmental Toxicology Option (70-79 units)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. BIOL 005A, BIOL 05LA, BIOL 005B</td>
<td>[No Change]</td>
</tr>
<tr>
<td>2. CHEM 005 or BIOL 005C; CHEM 112A,</td>
<td>[No Change]</td>
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<tr>
<td>CHEM 112B, CHEM 112C</td>
<td>[No Change]</td>
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<tr>
<td>3. ENTX 101, ENTX 154</td>
<td>[No Change]</td>
</tr>
<tr>
<td>4. PHYS 002A, PHYS 002B, PHYS 002C</td>
<td>[No Change]</td>
</tr>
<tr>
<td>5. PHYS 02LA, PHYS 02LB, PHYS 02LC are recommended</td>
<td>[No Change]</td>
</tr>
<tr>
<td>6. ENSC 006/ECON 006 or ENSC 143A/ECON 143A (ECON 003 prerequisite)</td>
<td>[No Change]</td>
</tr>
<tr>
<td>7. BCH 100 or both BCH 110A and BCH 110B; BIOL 102 or BIOL 121/MCBL 121; BCH 110C or BIOL 107A</td>
<td>[No Change]</td>
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<tr>
<td>8. STAT 100A and STAT 100B</td>
<td>[No Change]</td>
</tr>
<tr>
<td>9. Elective Courses: At least one course from ENSC 127/SWSC 127, ENSC 133/MCBL 133/SWSC 133, ENSC 135/CHEM 135/ENTX 135, ENSC 136/CHEM 136/ENTX 136/SWSC</td>
<td>[No Change]</td>
</tr>
<tr>
<td>9. Elective Courses: At least one course from ENSC 127/SWSC 127, ENSC 133/MCBL 133/SWSC 133, ENSC 135/CHEM 135/ENTX 135, ENSC 136/CHEM 136/ENTX 136/SWSC</td>
<td>[No Change]</td>
</tr>
</tbody>
</table>

**Natural Science Option** (65-71 units)

1. BIOL 005A, BIOL 05LA, BIOL 005B
2. PHYS 002A, PHYS 002B, PHYS 002C
3. PHYS 02LA, PHYS 02LB, PHYS 02LC are recommended
4. CHEM 112A, CHEM 112B
5. GEO 001 or GEO 002
6. ENSC 006/ECON 006 or ENSC 143A/ECON 143A (ECON 003 prerequisite)
7. STAT 100A and STAT 100B
8. Elective Courses:
   a) At least one course from BIOL 005C, CHEM 005, CHEM 112C, MATH 009C
   b) A total of at least five courses from the following (at least three must be Environmental Sciences or Soil and Water Sciences)

*ENSC 120/NEM 120/SWSC 120, ENSC 127/SWSC 127, ENSC 133/MCBL 133/SWSC 133, ENSC 135/CHEM 135/ENTX 135, ENSC 136/CHEM 136/ENTX 136/SWSC 136, ENSC 140/SWSC 140, ENSC 141/MCBL 141/SWSC 141, ENSC 142, ENSC 144/ENVE 144, ENSC 155, ENSC 163, ENSC 174, BPSC 134/ENSC 134/SWSC 134, ENSC 134/SWSC 134, ENSC 104/SWSC 104, ENSC 107/SWSC 107, ENSC 138/GEO 138/SWSC 138, CBNS 150/ENTX 150, ENSC 197, ENSC 198-I, BIOL 117, BIOL 121/MCBL 121, BIOL 121L/MCBL 121L,

BIOL 124/MCBL 124, BIOL 160, BIOL 163, BPSC 104/BIOL 104, CHEM 109, ENTX 101, GEO 157, GEO 162, GEO 167, GEO 168

Social Science Option (80-85 units)

1. BIOL 002, BIOL 003
2. GEO 001 or GEO 002
3. ECON 003
4. ENSC 143A/ECON 143A, ENSC 143B/ECON 143B, ENSC 143C/ECON 143C, ENSC 172, ENSC 174
5. ECON 101 or ECON 107
6. STAT 100A and STAT 100B
7. Elective Courses:
   a) At least one course from ENSC 133/MCBL 133/SWSC 133, ENSC 140/SWSC 140, ENSC 141/MCBL 141/SWSC 141, ENSC 142, ENSC 144/ENVE 144, ENSC 155, ENSC 163, BPSC 134/ENSC 134/SWSC 134, ENSC 104/SWSC 104, ENSC 107/SWSC 107, ENSC 138/GEO 138/SWSC 138, ENSC 197, ENSC 198-I
   b) A total of at least six courses from the following:
      Economics: ECON 102A, ECON 102B, ECON 146, ECON 148, ECON 156, ECON 160/BUS 160
      Society and culture: ANTH 132, ANTH 134, ANTH 135, ANTH 186/LNST 166, PHIL 117, SOC 137, SOC 143/URST 143, SOC 182/URST 182, SOC 184

Social Science Option (85-90 units)

BIOL 160, BIOL 163, BPSC 104/BIOL 104, CHEM 109, ENTX 101, GEO 157, GEO 162, GEO 167,

Social Science Option (80-85 units)

1. BIOL 002, BIOL 003
2. GEO 001 or GEO 002
3. ECON 003
4. ENSC 143A/ECON 143A, ENSC 143B/ECON 143B, ENSC 143C/ECON 143C, ENSC 172, ENSC 174
5. ECON 101 or ECON 107 or SOC 110
6. STAT 100A and STAT 100B
7. Elective Courses:
   a) At least one course from ENSC 133/MCBL 133/SWSC 133, ENSC 140/SWSC 140, ENSC 141/MCBL 141/SWSC 141, ENSC 142, ENSC 144/ENVE 144, ENSC 155, ENSC 163, BPSC 134/ENSC 134/SWSC 134, ENSC 104/SWSC 104, ENSC 107/SWSC 107, ENSC 138/GEO 138/SWSC 138, ENSC 197, ENSC 198-I
   b) A total of at least six courses from the following:
      Economics: ECON 102, ECON 103, ECON 104A, ECON 105A, ECON 116, ECON 129, ECON 146, ECON 148, ECON 156, ECON 160/BUS 160, ECON 181, ECON 182, ECON 183
      Society and culture: ANTH 110, ANTH 129, ANTH 132, ANTH 134, ANTH 135, ANTH 142, ANTH 170, ANTH 186/LNST 166, PHIL 117, PHIL 137, SOC 137, SOC 143/URST 143, SOC 182/URST 182, SOC 184
Regulation and law: POSC 101, POSC 166, POSC 181, POSC 182, POSC 183

Management: BUS 104/STAT 104, BUS 122, GEO 157, GEO 167, MATH 120

**Minor**

The minor in Environmental Sciences consists of the following:

1. Lower-division requirements (23 units)
   a) ENSC 002 or ENSC 017; ENSC 006/ECON 006
   b) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC

2. Upper-division requirements (20 units)
   a) ENSC 100/SWSC 100, ENSC 101, ENSC 102
   b) Eight (8) units of additional upper-division courses in Environmental Sciences, no more than 4 units of which are in courses numbered 190-198

Of the specified upper-division units, a minimum of 16 units must be unique to the minor and may not be used to satisfy major requirements.

See Minors under the College of Natural and Agricultural Sciences in the Colleges and Programs section of this catalog for additional information on minors.

**Concentration Areas**

Students wishing to specialize in a particular
science or discipline may do so by working with an advisor to select an appropriate sequence of elective courses within one of the required options. Sample areas of concentration and suggested courses are:


4. Environmental economies: ENSC 143A/ECON 143A, ENSC 143B/ECON 143B, ENSC 143C/ECON 143C, ECON 146, ECON 148, ECON 156

**JUSTIFICATION:**
The proposed changes to the “Major Requirements” represent an attempt to identify students for whom Environmental Sciences is an inappropriate major sufficiently early in their academic career so they can be redirected to a more appropriate major in time to complete it. Proposed catalog changes to the Major Requirements in the Environmental Toxicology Option, Natural Science Option, and Social Science Option. Requirements not listed below will be unchanged in the catalog. The change in the core math requirement for the Social Science Option of dropping MATH 22 and replacing it with MATH 009A/008B and MATH 9B in the “Core Requirements” has already been approved and submitted. Upper-division elective classes that are no longer being offered were deleted and newly developed courses that meet the needs of Environmental Sciences students were added. Math 022 has been replaced by Math 009A/008B and Math 9B and included in the “Core Requirements.” The title of the “Management” group was changed to “Management/Analytics” to better represent elective content. These four “Concentration Areas” or areas of specialization add a level of complexity that is not needed. The academic and faculty advisors are better able to guide students into areas of specialization.
Approvals

Approved by the faculty of the Department of Environmental Sciences: April 4, 2012.

Approved by the Executive Committee of the College of Natural and Agricultural Sciences: April 17, 2012

Approved by the Committee on Educational Policy: 4/30/12