

B.A. IN ECOSYSTEM SCIENCE AND POLICY

Overview

The B.A. degree in Ecosystem Science and Policy is recommended in preparation for careers in law, government and business, including professional schools and careers in government and private industries concerned with the environment. Students pursuing the B.A. may choose to have the major fulfill either the STEM or People & Society cognate; they will need to complete the other cognate plus the Arts & Humanities cognate. Students with a second major in another school or college should consult their advisors regarding requirements for that major. Any course used to fulfill one ECS requirement cannot be used to fulfill another; however, courses other than the ECS core can be used to fulfill requirements for a cognate, minor, or second major. Students whose primary college is Arts & Sciences are required to complete four courses designated as "Writing Intensive" (also known as "W") courses. Those seeking a B.A. degree in ECS must complete at least two, but as many as four, ECS courses designated as "W". These include ECS 113, ECS 301, ECS 302, ECS 402, and ECS 403. Up to two "W" courses may be selected from other departments. Students whose primary degree is in another school or college should follow its writing requirements.

Curriculum Requirements

| Code | Title | Credit Hours |
|---|---|--------------|
| ECS Core Courses | | |
| ECS 111 | Introduction to the Earth's Ecosystem | 3 |
| ECS 112 or ECS 114 | Field Problems in Ecosystem Science and Policy Social research methods for Ecosystem Science and Policy | 2 |
| ECS 113 | Introduction to Environmental Policy | 3 |
| ECS 201 or ECS 202 | Seminar Series in Contemporary Environmental Issues I Seminar Series in Contemporary Environmental Issues II | 1 |
| ECS 232 | Ecological Principles and Environmental Applications | 3 |
| ECS 301 | Tools for Environmental Decision-Making: The Quantitative Perspective | 3 |
| ECS 302 | Perspectives on Environmental Decision Making | 3 |
| ECS 401 or ECS 402 | Internship Thesis | 3 |
| ECS 403 | Interdisciplinary Approaches | 3 |
| 6-CR ECS electives at 300-level or higher | | 6 |
| Science Core Courses | | |
| ECS 312 or CET 240 or CET 340 | Environment Assessment Environmental Quality Control Introduction to Environmental Engineering | 3 |
| 6-CR Environmentally related STEM 101-level or higher ¹ | | 6 |
| 3-CR Environmentally related STEM 200-level or higher ¹ | | 3 |
| Mathematics Courses | | |
| MTH 108 | Precalculus Mathematics II (or higher) | 3 |
| Select one of the following Statistics courses: | | 3 |
| ECS 204 | Environmental Statistics | |
| MSC 204 | Environmental Statistics | |
| MTH 224 | Introduction to Probability and Statistics | |
| PSY 292 | Introduction to Biobehavioral Statistics Section B | |
| Social Science Core Courses | | |
| GEG 310 | Geographic Information Systems I | 3 |
| 6-CR Environmentally related social science course from field different than chosen minor at 200-level or higher ² | | 6 |
| Complete a People and Society or Arts and Humanities minor ³ | | 12-18 |
| General Education Requirements | | |
| Written Communication Skills: | | |
| WRS 105 | First-Year Writing I | 3 |
| WRS 106 or WRS 107 or ENG 106 | First-Year Writing II First-Year Writing II: STEM Writing About Literature and Culture | 3 |

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| Quantitative Skills: | |
| MTH 108 | Precalculus Mathematics II (fulfilled through the major) |
| Areas of Knowledge: | |
| Arts & Humanities or People & Society Cognate (9 credits) (fulfilled through the minor) | |
| People & Society or Arts & Humanities Cognate (depending on which one is fulfilled through the minor) | 9 |
| STEM Cognate (9 credits) (fulfilled through the major) | |
| Additional Required Courses | |
| Language Course | 3 |
| Electives/Additional minor | 33 |
| Total Credit Hours | 120 |

¹ BIL, CHM, CSC, MIC, NEU, PHY, GSC, MSC, CAE, or approved

² APY, ARC, ECO, ECS, GEG, HIS, INS, LAS, MAF, POL, PSY, SOC, EPS, COM, BPH, or approved

³ See list of current relative minors maintained by the program director.

Suggested Plan of Study - with Minor

In this plan, we are showing the case in which study abroad simply counts toward the total required for graduation, 120 credits. However, study abroad courses generally can be used as courses for ECS, for a minor, or for cognates, in which case there would be additional electives opened up in subsequent semesters.

| | | |
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| Year One | | |
| Fall | | Credit Hours |
| ECS 111 | Introduction to the Earth's Ecosystem | 3 |
| MTH 108 | Precalculus Mathematics II | 3 |
| WRS 105 | First-Year Writing I | 3 |
| Language Course | | 3 |
| Env. related social science course | | 3 |
| | Credit Hours | 15 |
| Spring | | |
| ECS 112 | Field Problems in Ecosystem Science and Policy | 2 |
| ECS 113 | Introduction to Environmental Policy | 3 |
| WRS 106, 107, or ENG 106 | First-Year Writing II or First-Year Writing II: STEM or Writing About Literature and Culture | 3 |
| Env. related STEM 101+ | | 3 |
| Env. related social science course | | 3 |
| Elective | | 3 |
| | Credit Hours | 17 |
| Year Two | | |
| Fall | | |
| ECS 201 | Seminar Series in Contemporary Environmental Issues I | 1 |
| ECS 232 | Ecological Principles and Environmental Applications | 3 |
| ENV Related STEM Course | | 3 |
| Env. related social science 300+ | | 3 |
| Minor Course | | 3 |
| Elective | | 3 |
| | Credit Hours | 16 |
| Spring | | |
| ECS 301 | Tools for Environmental Decision-Making: The Quantitative Perspective | 3 |
| GEG 310 | Geographic Information Systems I | 3 |
| MSC 204 | Environmental Statistics | 3 |
| Minor Course | | 3 |

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|------------------------------------|---|------------|
| Arts and Humanities Cognate Course | | 3 |
| Credit Hours | | 15 |
| Year Three | | |
| Fall | | |
| Study Abroad | | 3 |
| Study Abroad | | 3 |
| Study Abroad | | 3 |
| Study Abroad | | 3 |
| Credit Hours | | 12 |
| Spring | | |
| ECS 302 | Perspectives on Environmental Decision Making | 3 |
| ECS Elective 300 level or higher | | 3 |
| Minor Course | | 3 |
| Arts and Humanities Cognate Course | | 3 |
| Elective | | 3 |
| Credit Hours | | 15 |
| Year Four | | |
| Fall | | |
| ECS 401 | Internship | 3 |
| ENV Related STEM 200+ | | 3 |
| ECS Elective 300 level or higher | | 3 |
| Arts and Humanities Cognate Course | | 3 |
| Minor Course | | 3 |
| Credit Hours | | 15 |
| Spring | | |
| ECS 403 | Interdisciplinary Approaches | 3 |
| ECS 312 | Environment Assessment | 3 |
| Minor Course ¹ | | 3 |
| Minor Course | | 3 |
| Elective | | 3 |
| Credit Hours | | 15 |
| Total Credit Hours | | 120 |

Suggested Plan of Study - with Second Major

In this plan, we are showing the case in which no courses from the second major (30 credits) are double counted with ECS. However, some course may double count, in which case electives will be opened up.

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| Year One | | |
| Fall | | |
| ECS 111 | Introduction to the Earth's Ecosystem | Credit Hours 3 |
| MTH 108 | Precalculus Mathematics II | 3 |
| WRS 105 | First-Year Writing I | 3 |
| Language Course | | 3 |
| Second Major Course | | 3 |
| Credit Hours | | 15 |
| Spring | | |
| ECS 112 | Field Problems in Ecosystem Science and Policy | 2 |
| ECS 113 | Introduction to Environmental Policy | 3 |
| WRS 106 | First-Year Writing II | 3 |
| Env. related social science 200+ | | |
| Second Major Course | | 3 |

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|---|---|------------|
| Elective | | 3 |
| | Credit Hours | 14 |
| Year Two | | |
| Fall | | |
| ECS 201 | Seminar Series in Contemporary Environmental Issues I | 1 |
| ECS 232 | Ecological Principles and Environmental Applications | 3 |
| Env. related STEM 101+ | | |
| Env. related social science 200+ | | |
| Second Major Course | | 3 |
| Elective | | 3 |
| | Credit Hours | 10 |
| Spring | | |
| ECS 302 | Perspectives on Environmental Decision Making | 3 |
| MSC 204 | Environmental Statistics | 3 |
| GEG 310 | Geographic Information Systems I | 3 |
| Env. related STEM 101+ | | |
| Second Major Course | | 3 |
| | Credit Hours | 12 |
| Year Three | | |
| Fall | | |
| Second Major Course | | 3 |
| Second Major Course | | 3 |
| Env. Related STEM 200+ | | 3 |
| Arts and Humanities Cognate | | 3 |
| ECS Elective 300 level or higher | | 3 |
| | Credit Hours | 15 |
| Spring | | |
| ECS 301 | Tools for Environmental Decision-Making: The Quantitative Perspective | 3 |
| Second Major Course | | 3 |
| ENV Related social science 200+ | | 3 |
| ECS Elective 300 level or higher | | 3 |
| Arts and Humanities Cognate | | 3 |
| | Credit Hours | 15 |
| Year Four | | |
| Fall | | |
| ECS 401 | Internship | 3 |
| Second Major Course | | 3 |
| Second Major Course | | 3 |
| Env. related social science 200+ ¹ | | 3 |
| Arts and Humanities Cognate | | 3 |
| | Credit Hours | 15 |
| Spring | | |
| ECS 403 | Interdisciplinary Approaches | 3 |
| ECS 312 | Environment Assessment | 3 |
| Second Major Course | | 3 |
| Elective | | 3 |
| | Credit Hours | 12 |
| | Total Credit Hours | 108 |

Mission

The mission of the Ecosystem Science and Policy (ECS) program is to educate the next generation of environmental leaders. Future leaders need to find ways to meet human demands, while protecting and restoring the natural environment that sustains us. As science increasingly demonstrates the

complex interconnectedness of all the elements of natural systems, environmental decisions must take into account potential ecosystem-wide effects to be truly effective. Environmental scientists and nonscientist policy-makers, managers, and planners must communicate with each other in new and better ways as development and environmental policy decisions are made. The program offers two degrees, a Bachelor of Science and a Bachelor of Arts.

Goals

The Bachelor of Arts degree prepares students with knowledge in a broad background of environmental issues from a variety of perspectives, along with in-depth education in a related area of specialization. Students earning a Bachelor of Arts degree in ECS carry out intensive study in social science approaches to environmental issues.

Student Learning Outcomes

- **Scientific Knowledge:** Students will demonstrate a comprehensive understanding of ecosystem science.
- **Policy Knowledge:** Students will demonstrate an ability to evaluate the role of science and technology in society and demonstrate understanding of factors involved in the formulation and implementation of environmental policy.
- **Communication Skills:** Students will demonstrate communication skills to convey information, orally and in writing, to both scientific and lay audiences.