

Environmental Studies/ Environmental Science Advising Guide

v1.0

Introduction

Please read this guide before meeting with your advisor. It contains answers to many common questions and will help you work through your choices in the major.

Our goal is to help you **become your own best advisor** by giving you access to the information you need to make decisions about your major. **Be very skeptical** about advice you get from your peers. Instead, get your information from this document as well as from the department website (at <http://www.dickinson.edu/academics/programs/environmental-studies/>). Pay special attention to the “Info for Majors” tab, and consult with your advisor or another professor in the department for specific questions.

Every time you meet with your advisor, please bring your worksheet (available on the website)!

Becoming a Major / Getting Courses You Need

If you’re interested in becoming a major, talk to us about it! We want to meet you, and it’s important that we know who you are early in the process — especially before course registration each semester.

Once you declare your major, you will get priority for ENST courses. For a course like ENST 131, which typically fills up, this may be critical. If you need major priority, **you must declare you major well before course request period**. Check the Registrar’s web page for details. Don’t get stuck being locked out of a course you were planning to take because we didn’t know you planned to be a major!

A note to prospective Minors: It is even more important for you to speak with professors in the Environmental Studies department as soon as possible. Because you don’t declare a minor, and minors are not tracked by the Registrar, you also will not get major priority for the courses you need. Instead, you’ll need to stay in close contact with professors offering the courses you intend to take for the minor to ensure that you get courses for which you otherwise might not have priority. Talk to the Academic Department Coordinator or any ES professor as soon as you start thinking about the minor, and check out the ES Minor Advising Worksheet available via the “Info for Majors” tab on the department website.

It’s a good idea to sit down as soon as you can with the advising worksheets (available on the department website under “Info for Majors”) and start working out a tentative schedule of what you’ll need to take in each semester. Note that courses are not necessarily offered every semester. Pay special attention to sequences that take a year to complete (like ENST 131/132). If you’re planning to go abroad or otherwise study off-campus, keep in mind how those plans may interfere with required coursework.

For example: If you don't take ENST 131 in your first year (and don't have AP credit), you'll need to take that course as soon as possible. Since it fills up quickly, you will probably need to declare the major to have adequate priority. That will mean declaring well in advance of the course selection period in the second semester of your first year. Otherwise, since 131 is only offered in the Fall semester, you'll have to take it in the fall of your junior year instead — and that may affect your semester abroad plans. Try to plan as far ahead as you can, especially for required courses.

As noted above, some courses are so full that only declared majors are accepted. If you need the course for a major, be sure you declare the major well before course request period. (Minors should talk to the course professor well before course selection.) And always talk to the professors if you're interested in a course that might be full.

Requirements for Graduation

You can check your general education distribution requirements on Gateway. See the document "How to do a degree evaluation" under "Info for Majors" on the department website for instructions. You will get a number of distribution requirements through courses required for the major: As of this writing, WR (ENST 330); QR (typically through the required math course for the theme); one course each in Division Ia (ENST 111 or 215) and Division II (Economics); and the two required Division III lab courses.

However, the Registrar cannot check whether you have fulfilled your requirements for the major, since the ENST/ENSC majors are too complex with many different paths toward completion. Only your advisor knows the requirements well enough to approve your choices. In your senior year, your advisor will go through your courses to make sure you've fulfilled the major requirements. If you're not sure whether you've met a requirement along the way, be sure to talk with your advisor. Moreover, if you are approved to make any exceptions or substitutions, be sure to keep a record of the agreement you made with your advisor. A copy of an email from your advisor, approving a course substitution, will be adequate if there are any questions when it comes time to audit your major in your senior year.

The Environmental Studies/Science Core Curriculum (BA and BS)

The core sequence is nearly identical for the ENST (Studies, BA) and ENSC (Science, BS) majors. The intention is to provide all majors with a strong and broad grounding in the science, policy, ethics, and economics of the environment.

In general, **the department does not allow substitutions for core courses.** Exceptions have been made in rare cases. If you need to make a substitution for any core requirements, you must write a letter to your advisor (cc'ing the chair) to explain the proposed substitution, what parts of the required course are and are not covered by the substitution, and why you think the substitution should be acceptable. Do this well before any course selection period, in consultation with your advisor.

Specifics notes on core courses

ENST 130/131/132

The introduction to the major happens through the sequence ENST 130/131 or the sequence ENST 131/132. ENST 130 is targeted at students with no previous environmental coursework at the college level, and ENST 132 towards potential or declared majors who have (presumably) taken ENST 131 (or have AP ES credit). Both sequences count identically towards the major. AP ES credit can be substituted for ENST 131 (but not for ENST 130 or 132).

Be sure to take ENST 131 and 130/132 early. You may need major priority to register, especially for 131 and 132, which fill up quickly. If you are planning to take 131 in the fall of your sophomore year, you will need to declare the major well before spring course selection (mid-March) in your first year. Don't wait too late to take 131 or 132 and have it impact your junior year abroad plans — get these done by sophomore year. (Note: 131 is sometimes offered in the summer; ask the department chair if you are interested.)

Independent Research

You may choose to do two semesters of independent research during the senior year in lieu of ENST 406 Senior Seminar. If you are interested in doing research in your senior year, you'll need to start talking to professors about your ideas in the spring of your junior year. See the schedule under "Student Research" on the department website.

The Theme (BS and BA)

The theme is your chance to pursue a topic that interests you in much more detail. Start thinking about ideas for your theme as early as possible and discuss them with your advisor. Not every course that you count for the major must be specifically related to your theme, but there should be an overall coherence. In the end, the suitability of courses for your theme is up to you and your advisor.

Here are just a few ideas for themes – but don't feel limited to topics on this list!

- Climate change
- Energy policy
- Environmental ethics
- Environmental chemistry
- Environmental geology
- Environmental history
- Environmental justice
- Environmental literature
- Estuarine environments
- Loss of biodiversity
- Natural resource management
- Natural resource extraction
- Sustainable agriculture
- Sustainable development

Your specific theme interests should fit with your choice of the BA or BS degree; for example, “environmental chemistry” is a good BS theme, and “environmental justice” a good BA theme.

Notes on the theme

- Many students get several of their theme courses during a semester off-campus. Consider your theme when choosing an abroad program. A “Mosaic” program may also be a good way to get a number of courses in one semester.
- A course may **NOT** count towards both your core and your theme.
- Theme courses need not be cross-listed with ENST (but see details below for other requirements).
- You’ll notice that many of the theme courses have the numbers ENST 310 or ENST 311. In the ENST department, 311 is the generic course number for a special topics course without a lab, often appropriate for a BA theme; ENST 310 is a topics course with a lab (often appropriate for either a BA or BS theme). You may take as many different 310/311 courses as you like.
- Note: SOCI 244/ANTH 241 Quantitative Research Methods may be substituted for MATH 121 for your theme for the BA, or can count as the math requirement for the BS. (Do not confuse this with SOCI 240 Qualitative Methods).

The BA (Environmental Studies) Theme

Theme courses for BA degree should be at the 200 level or above, emphasizing an environmental problem, topic, or region.

How “environmental” must a course be? Ask your advisor if you’re unsure whether a course may count. A good rule of thumb is that roughly 50% of the course content should directly relate to the environment or an environmental concern (as demonstrated through the syllabus or course requirements). If a final paper or project is a substantial fraction of the grade, you may be able to write an environmentally-focused paper or project to ensure that the course is “environmental” enough. If in doubt, discuss with your advisor and the course professor. As always, your advisor has the final word, and it’s a good idea to keep documentation of your agreement about what courses count.

A few of the many courses appropriate for a BA theme:

- ENST 311 Sustainability: Social Justice and Human Rights
- ENST 311 The Politics of Environmental Protection in Asia
- ENST 311 Reducing Dickinson’s Carbon Footprint
- ENST 311 Communism and the Environment
- ENST 205 Global Environmental History
- ANTH 214 Ecological Anthropology
- ECON 496 Sustainable Food Production & Urban Agriculture
- RELG 311 Buddhism and the Environment
- WGST 202 Ecofeminism

Can science courses count for the BA theme? Certainly, as long as they are “environmental” enough, and are at the 200 level or above. In addition, there are a few 100-level courses which may be counted towards the BA theme: CHEM 132, CHEM 141, PHYS 132, PHYS 142. (Each of these is the second semester of a two-semester sequence in chemistry or physics required for the BS degree; the more advanced CHEM 141 Accelerated General Chemistry also fulfills this requirement. You may not count both of the courses in these 100-level sequences for the BA theme, but only the second semester.)

A course taken for the **additional lab science requirement** for the BA theme should also be at the 200 level or above, and will preferably be one where ENST 132/132 meets the prerequisite for enrollment and/or informs the course material.

Internship/Research Experience for Transcript Notation

The BA theme requires an independent intellectual experience in the form of an internship or independent research, related to an environmental subject, for transcript notation. The transcript notation program does not result in an academic credit. An internship or research experience for which academic credit is awarded may count towards your theme, but **does not** fulfill the transcript notation requirement.

Note: If you entered Dickinson prior to Fall 2012, you have the option of completing a credit-bearing internship in accordance with the old internship requirement, by doing an internship for academic credit. (However, if you want academic credit for an internship done over the summer, you must pay Summer School tuition. In this case, Transcript Notation is probably a better choice.)

Most students will fulfill this requirement through the Internship Transcript Notation program while working at a summer job or on campus during a semester. The Transcript Notation program requires at least 80 hours of work, ordinarily performed over the course of 8 weeks. You must register for the Transcript Notation program well before the summer or semester, and you cannot do so after you start working! For more information, see <http://www.dickinson.edu/student-life/resources/career-center/content/student/Internship-Program---Resources---Transcript-Notation-Program/> .

When planning your internship or research experience, **talk to your advisor first to make sure it is suitable for your theme**. The Transcript Notation program is a College-wide program and will accept internships on any topic; but only an environmentally-related experience can be used to fulfill this requirement for your major. Get approval from your advisor before signing up for the Transcript Notation program.

For questions on the Transcript Notation programs, you may also contact Amity Fox, Internship Coordinator, <foxa@dickinson.edu> .

The BS (Environmental Science) Theme

The intent of the BS major is to give you strong preparation for a science-based career or for graduate training in environmental science. Your theme courses should be at the 200 level or above, except for the few required 100-level courses (in math, chemistry, or physics). Your theme courses need not

have a strict environmental relevance, as long as they are relevant to your theme; for example, a physics or math course may be relevant without having specific environmental content if it provides useful background or skills. As always, ask your advisor if you are uncertain about the relevance of a course for your theme and professional training.

What counts as a science course?

Most BS theme courses will be in ENST, or in BIOL, ERSC, CHEM, or other “natural science” departments. There is some question about courses in the social sciences, for example, Sociology, or courses in interdisciplinary programs like International Studies. If you find courses in these departments that you think fit your theme, talk to your advisor about them and get their approval first. Social science courses may not be viewed as adequate preparation by some traditional environmental science graduate programs; however, they may be very good preparation for other graduate programs (for example, in sustainability or in public health) or for other career trajectories.

Some courses in ENST are not strongly science-based and cannot count for your BS theme. Courses with labs (e.g., ENST 310 special topics courses) are typically strongly science-focused. (Note: There are a few natural science courses that do not have a lab, but do count toward a BS theme; e.g. ERSC 202 Energy Resources.)

Some courses outside of the natural sciences may qualify for your theme. If a final paper or project is a substantial fraction of the grade, you may be able to submit a strongly scientific research paper/project so the course counts for your BS theme. If in doubt, discuss with your advisor and the course professor. As always, your advisor has the final say, and it’s a good idea to keep documentation of your agreement about what courses count.

Notes on the BS Theme

DO NOT wait to take your introductory CHEM or PHYS courses in your senior year! While sometimes possible, this is difficult to schedule, and more importantly, it deprives you of the chance to build on that knowledge. Get the introductory sequence done as soon as possible, and watch for conflicts with your plans for junior year abroad.

ENST courses as prerequisites: Several intermediate- and upper-level BIOL courses have a prerequisite of two intro Biology courses. Some of these courses will accept the ENST 130/131 or 131/132 sequence instead, in which case you need not take two more intro-level BIOL courses. Similarly, there are several 200- and 300-level ERSC courses for which 130/131/132 are sufficient preparation. For a list of these BIOL and ERSC courses, see the document “Courses in BIOL/ERSC to which ES majors have access” under “Info for Majors” on the department website.

The “Integrative” Requirement

The BS theme requires “two integrative courses from two different departments”. The intention of this requirement is to ensure that your coursework is suitably interdisciplinary, in keeping with the nature of environmental science as a field.

An “integrative” course combines knowledge and practices from more than one disciplinary field. For example:

- Environmental Chemistry is obviously integrative.
- The very nature of ecologic study makes almost any ecology course integrative (e.g., BIOL 314 Ecology).
- Geographic Information Systems: Because of the importance of the GIS tools, and their cross-cutting examination of problems in many fields, the GIS courses are suitable theme courses. In addition, **one** GIS course may be used for the “integrative” requirement.
- PHYS 314: Energy and Environmental Physics combines training in both the physical and environmental sciences, and is likely to count towards the “integrative” requirement.
- ENST 310 Environmental Health Research Methods: The overlap between public health content (e.g., epidemiology) and environmental aspects (e.g., fate and transport of chemicals) makes this a clear example of an integrative course.

What about a more difficult case, like BIOL 401 Ornithology — is this an “integrative” course? If the emphasis is on bird anatomy, it may not be; if there is sufficient context about the ecological context of bird life, it may be. Similarly, ERSC 208 Environmental Hazards examines geologic aspects of natural hazards, but may also address impacts on human populations, and so may count as an integrative course depending on how it is taught. In cases like these, you may need to convince your advisor that your course meets the “integrative” requirement. You may also want to discuss this question with the course professor.

Note: The degree requirements say that the two integrative courses must be in two different departments. This is usually easy to fulfill since many relevant courses are cross-listed (e.g., ENST/BIOL) and might be counted in either department, while some courses abroad are listed in departments that don’t exist at Dickinson (e.g., Marine Science).

Sample courses for the BS Theme

- ENST 218 Geographic Information Systems — theme, integrative
- BIOL 314 Ecology — theme course, integrative
- BIOL 401 Vertebrate Biology — theme course; may or may not be integrative

Borderline examples

- ENST 311 Cities, Environment, and Health — May or may not be a science course; you may need to write a specifically science-based final paper or project. Discuss with the professor offering the course and with your advisor.
- ENST 311 Reducing Dickinson’s Carbon Footprint — May or may not be a science course, depending on how quantitative the work is and what aspect of the project you choose to work on. Discuss with the professor and your advisor.

Study Off-Campus and Abroad

In addition to the educational and cultural benefits of off-campus study, many environmental studies/science students will find that a semester off-campus is a good opportunity to take several theme courses. When choosing an off-campus program, consider what courses you may get from the program, and how it might relate to your theme. Remember, you may not (ordinarily) substitute core

courses with courses taken abroad; instead, you should take your core courses at Dickinson, both to assure that you will get credit toward the major, and also because your time off-campus should be spent exploring educational experiences not available on campus.

Common Programs

In addition to the School for Field Studies (see below), many ENST/ENSC students spend a semester at University of East Anglia or the University of Queensland. Students have also studied off-campus through Washington Center (DC), Sea Semester, Living Roots, the Danish Institute for Study Abroad, and many others. For a list of available study abroad programs, see <http://dickinson.edu/academics/global-campus/content/Study-Abroad/>.

The School for Field Studies

Many ENST/ENSC majors study abroad through The School for Field Studies, which offers a number of popular programs including Costa Rica, Australia, Turks and Caicos, and Kenya/Tanzania. All SFS programs have a similar structure, and include:

- A directed research project, which should count towards your theme for either the BA or BS.
- An ecology-related course, for example, “Tropical Marine Ecology” or “Tropical Ecology & Sustainable Development”. This course can count towards your theme for either the BA or BS. BS majors may count this as an “integrative” course, and it may also fulfill the BIOL 3XX requirement for the BS theme. BA majors may count this course for their “additional lab science”.
- A resource management course, which can count towards your theme for either the BA or BS. BS majors may count this as an “integrative” course.
- A course on policy, ethics, or values, which may count towards the BA theme, but will not count towards the BS theme nor substitute for the core ethics course for the major.

Economics courses at SFS do not count for the environmental science/studies core economics requirements.

Previously Allowed Substitutions

Check with your advisor before taking one of the following courses.

ECON 222

- SFS economics courses are NOT a substitute for Dickinson ECON courses.
- UEA: Ecological Economics DOES NOT substitute for ECON 222.
- Queensland: Environmental Economics ECON3700 DOES count in place of ECON 222.
- Arava: Environmental Economics course DOES count in place of ECON 222.
- UEA: Natural Resources and Environmental Economics DOES count in place of ECON 222.

ENST 330

- Policy courses taken off campus will normally not count for the ENST 330 requirement unless specifically focused on U.S. environmental policy, and if so require advance approval from the department.

ENST 335/340

- Queensland: Fisheries Catchment and Management has been substituted for ENST 335.
- UEA: Aquatic Ecology has been substituted for ENST 335.

MATH

- SOCI 244/ANTH 241 Quantitative Research Methods may be substituted for MATH 121 for your BA theme, or can count as your math requirement for the BS theme. (Do not confuse this with SOCI 240 Qualitative Methods).

Transferring Credits

Transfers of courses to Dickinson can be processed in three ways (via the “Enrollment In Another Institution” form on the Registrar’s home page):

- Transfer for general college credit: The course will count towards your credits for graduation, and will have the course number GNCR 0000. Although the course will not have an ENST number, you may still count it towards your theme if it meets the other theme requirements.
- Transfer for department credit: The course will have the number ENST 0000. This requires approval by the department chair.
- Transfer in lieu of a specific course: If you have taken a course that precisely corresponds to a particular course at Dickinson — for example, a statistics course similar to MATH 121 — you may transfer the course with the specific course number. This is less common, and requires the approval of the appropriate department chair.

Recommended Sequence

A suggested pattern for the four-year sequence runs as follows.

- First year: Prioritize ENST 131 and ENST 130/132. Begin taking other 100-level core courses: ENST 111/215; ECON 111/110; MATH 121. In addition, take courses that meet required general college distribution requirements. **Prospective BS majors:** Take year-long science sequence (CHEM 131/132, CHEM 141/2XX, PHYS 131/132, PHYS 141/142).
- Second year: Complete 100-level core requirements as well as college distribution requirements; take ENST/ECON 222; begin to explore thematic courses. **BS majors** should have completed year-long CHEM/PHYS sequence by end of the year. **BA majors:** Consider taking your additional lab science.
- Third year: Take ENST 330 and 335/340 if possible. Focus on thematic courses, particularly if studying off-campus. If considering a full year of research in senior year, begin talking to professors in the spring.
- Senior year: Complete 300-level courses: ENST 330 and 335/340, as well as senior seminar (ENST 406). **BA majors:** Complete independent intellectual experience (research or internship)