

Independent Study (ES460) – Guidelines  
Department of Environmental Studies  
Gettysburg College

## **Overview**

Student research can be the most gratifying part being an environmental studies major. It is wise to plan carefully and work diligently -- the rewards are definitely worth the effort. Note that students must have a minimum 3.0 GPA within the major to do an ES460 project. The following will guide the prospective ES460 student through the process.

## **How to Start the Process**

### 1. Choose a topic and project advisor (junior year fall or early spring semester)

The first and most important step is to choose your research area and your project advisor. To get some ideas, take a look at previous student research projects as well as the research interests of our wonderful ES Faculty

Once you have a few ideas, approach one or more of the faculty and discuss the possibilities. Don't be shy: we expect you to come and talk! Once you have scouted the territory, make your decision and ask the faculty member if they will serve as your project advisor.

While all faculty members will accept 460 students, there are limits to the number of students that each faculty member can advise. If you start your search late, it is possible that the project advisor with whom you want to work has a full load and will not be able to accept you. The faculty member may suggest that you do the project in another semester or work with another advisor. Don't take a refusal personally!

### 2. Formulate a project (junior year, January-March)

Your project advisor will make suggestions about reading material, library resources, as well as possible projects. You should dive into the material immediately and consult with your project advisor often as you learn about your topic.

### 3. Write a project proposal (Due April 1 except in special circumstances)

The proposal is a typewritten document (double-spaced) which must contain the following:

- Title page: A brief and informative project title, along with your name and that of the faculty research sponsor.

- Introduction: A description of the main ideas behind your project. It should lay the groundwork for the reader of the proposal and must include a short literature review, a summary of any preliminary research you may have already completed on the topic.
- Hypothesis or Objectives: A clear statement of the hypothesis you will test, questions to be addressed, or a statement of the objectives of the study.
- Research Design: A description of how you will test your hypothesis, questions, or meet your objectives. The research design includes your laboratory and/or field procedures, the methods you will use to analyze your data (including statistical methods), and a time-line showing when you expect to finish each part of your project. In consultation with your faculty research sponsor, you must list the costs of any special supplies and equipment necessary for the project.
- Literature cited: A list of the references you cited in the Introduction and Research Design sections. At least five references relevant to your topic must be cited. Use the author-year method.

#### 4. Receive Feedback from your advisor (1 week following submission)

Your advisor will study your proposal and grant approval to perform the project in consultation with the rest of the department. He/she may make some useful suggestions and offer some important ideas.

The approval of the department may be conditional if the proposal is incomplete or if the project is judged to be either too ambitious or too simple. In this case, you will be given an opportunity to resubmit your proposal.

The form used by the Registrar for Environmental Studies 460 registration will be signed by the department chairperson only if the proposal has been approved.

## Everything You Ever Wanted to Know about ES460s

### 1. Student Responsibilities

- Meet with the project advisor on a regular basis.
- Conduct the project at a pace that will lead to completion by the end of the semester.
- Present a brief (10-15 minutes) report to the department during the last week of the semester. The precise date and location of the 460 Symposia will be announced late in each semester. You must submit a typewritten abstract of your project results to the ES secretary by one week before the symposium.
- Submit your formal research paper to your faculty project advisor and to a second member of the ES department. The research paper is due by the end of the term.

### 2. Credit

The ES460 is a full year project. All ES460 students receive 1 course credit the semester that the project is completed. In addition, some ES460 students choose to enroll in ES463 Independent Study in the fall semester. ES463 is graded S/U and does not count toward the major.

### 3. Grading

The grade that a student receives for his or her 460 project is determined by the faculty sponsor. In addition to the quality of the paper you submit, your project advisor will consider the second reader's comments, your presentation at the symposium, the difficulty of the project you attempted, the quality of the data you obtained (independent of the quality of your data reporting), and your effort throughout the project. It is possible for a project with little useful or conclusive data to receive a good grade; it is also possible for a project with good data to receive a poor grade.

### 4. Other Questions

*Can my internships or REU experiences count as an ES 460?*

Projects that are not directly advised by an ES faculty member cannot count as an ES460 unless special arrangements are made.

*Can a 460 project be done in another department?*

Several faculty members at Gettysburg College in other science departments can advise 460 projects. There are two ways that a student may do this and obtain ES 460 credit:

1. A student may enroll in ES 460 with an ES faculty member as their formal project advisor. The actual work, however, may be supervised by the faculty member in the other department (e.g. biology).
2. A student may enroll in a 460 course (or its equivalent) in another department under the exclusive direction of a faculty member in that department. In this case, as with a student who completes a course at another institution, the student may petition the department to accept this course in lieu of the ES 460 requirement.

*Can a second project be done?*

Any student may choose to perform a second individualized research project. Only one such project, however, may count toward the environmental studies major. In effect, a student chooses this project as an elective. The second individualized study project may be an extension of the first under the direction of the same faculty member, or it may involve a completely different topic under the direction of a different faculty member. In either case, the student is not obligated to present his or her work at the 460 symposium.