

BIO 353 Independent Research (123 points)

Fall 2008

Faivre

Independent research provides students with the opportunity to work on one project for an entire semester. For seniors majoring in the Department of Biological Sciences, a total of 4 credits of BIO 353 and 1 credit of BIO 354 Thesis must be completed before graduation if they wish to have the title of their research on their transcript, to present their research at the Biological Sciences Symposium, and to receive a thesis cord. Seniors will typically be working on a single project for an entire year before graduation. Progress and success on an independent research project is not based so much on the “end product” as on serious and sustained effort throughout the process as well as taking ownership of the project and developing expertise in a particular area of science. If after a semester of research the project is not progressing due to lack of student input, the research advisor and student will discuss whether or not she should plan to continue the project and register for future semesters of BIO 353.

Expectations and Grading

Communication: Throughout the semester I expect each independent research student to keep me posted on the progress of her work and any snags that she may be encountering. The semester passes more quickly than we all realize. To ensure that no one is agonizing over some aspect of a project that is not working, or keeping us in suspense over a great success, attendance at lab meetings every other week is required. If you cannot come to lab meeting, I expect an email message with a valid reason prior to lab meeting. Lab meetings will be held every other Monday at 4:15pm. The first lab meeting will be on September 8, subsequent lab meetings will be: September 22, October 6, 20, November 3, 17, December 1. Lab meetings will be in SC 106. **You will earn 2 points towards your BIO 353 grade for each lab meeting that you attend, for a total of 14 points. If you must miss a lab meeting, but send an emailed excuse before lab meeting, you will earn 1 point for that week. If you miss a lab meeting, but have an officially excused absence, then that week will not be calculated into your final grade (you will not loose points for missing that lab).**

Progress: To ensure clarity with project and communication between myself and each student, a two-week summary of research progress is due at each lab meeting. These are not formal documents, though they should be typed – handwritten reports will not be accepted. The report should outline (can be in expanded bulleted format or organized narrative format), what areas of the research project you thought about, puzzled over, worked on, or read about during the two weeks prior to lab meeting. We will discuss these at lab meeting, and then you will hand them in to me. If you cannot attend lab meeting that week, I expect the summary to be sent to me as an email attachment prior to lab meeting (or you can leave a hardcopy on my door, prior to lab meeting). **You will earn a maximum of 5 points towards your BIO 353 grade for each progress report that you hand in for a total of 30 points (you will not be handing in a progress report for our first lab meeting). For each day a progress report is late, 1 point will be taken from the possible maximum 5 points.**

Keeping Current in the Field: As one becomes excited and drawn to a particular research project, sometimes one has trouble relating it to other, similar studies that have been done. It is important to try to see where your research fits into the larger picture of science. Thus, bring 2 papers from the primary literature that relate to your research topic to each lab meeting. For example, if you are studying the percentage of invasive plant species versus percentage of native plant species at the Acopian Center, you could bring in journal articles about: species sampling methods, problems with invasive species, methods of controlling invasive species, a history of invasive species, a study on invasive versus native species competing for resources, previous research done at the Acopian Center that describes the habitat there, etc. Think broadly when looking for papers. **You will earn 2 points for each paper that you bring to lab meeting for a total of 24 points (you will not be handing in papers for our first lab meeting). If you cannot make it to lab meeting, I expect copies of both papers to be put on my door, emailed to me as pdf files, or at least email the references to me before lab meeting. Points will not be given for late papers.**

Final Report: By **5pm on Thursday, December 11** I expect an ~5 page final progress report. This report should contain the following parts:

- **Introduction:** Provide the background for the project on which you have been working. What was the big picture and how does your project relate to it? (This section should include citations of many of the papers that you collected throughout the semester and brought to lab meeting).
- **Weekly Progress:** Account for the progress that you made from week to week throughout the semester in narrative form. Explain difficulties that you encountered and how you worked to resolve them. Explain what you consider to be major accomplishments both for yourself and the project. (Your progress reports for each lab meeting will be helpful in constructing this section of your final report).
- **Suggestions for future research/changes to current research:** What suggestions would you have for someone who was just starting the same project? Especially for the seniors – what aspects of the project will you change, redo the second semester? What are some of the things you wish you had known before starting on this independent study project?

You will earn a maximum of 30 points for your final report. Incompletes are not allowed and your score will be dropped 5 points each day that the report is late.

Expectations of Your Research Professor:

I will do my best to provide you with feedback both on your progress reports, and the progress that you are making on the project itself. If you are having trouble finding appropriate primary literature papers, I will help you to search for those, so that you have a useful collection before your final report. I will provide funding (through funds that have been set aside by the Department of Biological Sciences) to cover the cost of your research – provided that you give me receipts and records for reimbursement or allow me to order equipment/supplies for you. You are welcome to discuss it or any aspect of your project or progress with me at any time throughout the semester.

BIO 353 Independent Research	Maximum Possible Points (123 points)
Lab Attendance (7 meetings)	14 points
Progress Reports (6 reports)	30 points
Primary Literature Papers (12 papers)	24 points
Final Report (Due December 11)	30 points
Satisfactory Progress During the Semester – to be determined by Research Supervisor	25 points
Total Possible Points	123 points