

BIO 243 & 353 Independent Research
Fall 2006
Cigliano

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.

Students who have not take BIO 350 Junior Colloquium, but who wish to conduct research, may take BIO 243. The goals for BIO243 include allowing students to begin their exploration of a research project and to learn from the BIO 353 students on how to conduct a successful research project.

Expectations and Grading: My expectations are similar for BIO 243 and BIO 353 students. However, the specifics differ.

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. For BIO 243 students this might include progress on the development of your research interests or ideas or the progress of your research. For BIO 353 students this will include your progress on your research proposal or project.

Attendance: 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 Wednesday at 3:30PM (unless rescheduling becomes necessary): SEPTEMBER 10, 24 OCTOBER 1, 15, 29; NOVEMBER 12, AND DECEMBER 3. Lab meetings will be in SC 106. **You will earn 2 points towards your 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 me 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 meetings, 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. **You will earn a maximum of 5 points towards your 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. **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 a lab meeting, I expect copies of both papers to be put on my door or emailed to me as pdf files (my preference). Points will not be given for late papers. *Be prepared to discuss the papers.***

Final Report: Before the last day of finals week 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:**

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 (134 points)
Lab Attendance	14 points
Progress Reports	30 points
Primary Literature Papers	24 points
Final Report (Due by Last Day of Finals)	30 points
Satisfactory Progress During the Semester – to be determined by Research Supervisor	25 points
Total Possible Points	123 points

Final Grade: Final grades will be calculated as follows:

Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Points	114	110	107	102	98	94	89	86	82	77	<77

The above are minimum points needed for each grade. Grades are calculated as a range, *e.g.*, a B=102-106.99. *Grades will not be curved or rounded up.*