

BIOS 403/404

What?

This is a 5 credit per semester research course designed to give you hands-on experience with research. You should have a specific project worked out with your advisor that will test a hypothesis in some area of ecology, behavior or evolution. You may get help from your advisor, from graduate students, post-docs, technicians, or other undergraduates in choosing and executing the research. You may work together with other undergraduates. In some cases your work will be publishable and you should participate in this process. In many cases the work completed during your senior year will be a continuation of a project you began earlier (e.g., in Bios 310 or as paid work).

How Many Hours per Week?

The official guidelines indicate that three hours per week should be worked for each hour of credit, in this case 15 hours a week. This counts lab work, fieldwork, reading, and writing. Some students will work more than this, but it should be their choice. In addition, research often requires pulses of intense effort followed by less intense work times, so you should aim for an average of 15 hours per week over the semester.

Official Requirements:

You should spend most of your time on active, hands-on research. However, two written reports are required during the first semester. In addition, at the conclusion of the year, you are required to complete a final paper (in scientific journal format) and participate in the annual poster session (RURS). In the fall, you will turn in the Introduction and Methods of your paper (we recognize that your methods could change later) and a brief report on your progress in the fall semester. In spring you will turn in a completed paper, and a poster which you will enter in [RURS](#).

You will receive feedback on your work and progress by your advisor, by fellow senior research students, and by a departmental committee. You should revise your work after comments from your advisor and before you give it to the committee. Turn in papers and posters to the committee by uploading to OWLSPACE.

Schedule and Deadlines

Group meetings will be held in Anderson Bio Labs 130D.

FALL

11 September	First organizational meeting: 4-5PM
25 September	Introduction section turned in for peer review
6 October (BL130D)	Peer review/Discussion: "Introduction" 5-6PM
16 October	Introduction and Methods sections turned in to your advisor Methods turned in for peer review
29 October	Peer review/Discussion: "Methods" 5-6PM
6 November	Introduction and Methods sections turned in to the committee
13 November	Brief report on your progress turned in to your advisor
19 November	Discussion: "Effective presentations of results, graphs, and tables": 5-6PM
4 December	Brief report on your progress turned in to the committee

SPRING

28 January	Discussion: "Statistics, Figures and Tables": 5-6PM
11 February	Discussion: "Poster presentations": 5-6PM
8 March	Posters submitted to Owlspace for Peer Review
11 March	Peer review/Discussion: "Posters" 5-6PM
19 March	Draft of poster to advisor
26 March	Draft of entire paper to advisor Draft of entire paper for Peer Review
Late March	<i>Submit abstract to RURS and enter as soon as possible - slots fill up</i>
5 April	Poster to committee
8 April	Peer review/Discussion: "Peer review of full papers" 5-6PM
21 April	Final copy of entire paper to committee

Writing format:

With your advisor choose a journal and adhere to its style and format. Note on the title page what journal style you are following. Ecology Letters, Proceedings B of the Royal Society, Ecology, Behavioral Ecology, Conservation Biology, Journal of Molecular Evolution, and Genetics are good possibilities. Along the way, your advisor and the committee will assist you further in the design, data collection and analysis, and writing processes. Also see the Guidelines for Writing Scientific Papers posted on Owlspace.

Poster format:

Effective posters use figures and summaries to communicate, not long sections of text. We will give out more detailed poster instructions later (check web site) and the Cain project can also be very useful for help here.

Grading:

Your grade will be determined by your advisor and by the committee and will be based 70% on your advisor's assessment of your research, and 30% on your written material (25% Introduction and Methods, 5% on your progress report). During the second semester, your grade will be based 70% on your advisor's assessment of your research, 15% on your final paper, and 15% on your poster.

What else?

You should be in research because you want to be and might consider it for some part of your career. This is your chance to give it a serious try. In addition to the research you should participate in lab meetings if your advisor has them. You should consider participating in journal clubs either for credit or not. Your advisor can guide you here. We have departmental seminars weekly Mondays at 4 pm (munchies in 130D at 3:30) that you should attend when you can. In general, you should participate in the intellectual life of your lab group and the department as much as you have time for. This is, however, extra, and will not affect your grade.

What if I decide research is not for me and do not want to continue with Bios 404? This is fine. You will receive a grade for Bios 403 only. Of course, you will not be able to graduate with a BS in EEB, but you can receive a BA in Biology.