

BIOL 490

Biology Capstone – Fall, 2011

Instructor: Dr. McShaffrey

Meeting time: Wed 5:00 PM, Bartlett 362

Tentative class meeting schedule

Aug	31	Overview; research notebook organization
Sept	7	Resume writing Graduate School info – meeting in Bartlett 166
	14	Pointers on presenting; graphing
	21	No meeting Progress report #1
	28 or 29	Presentation: project status (W and Th)
Oct.	4 or 5	Presentation: project status (T and W)
	12	No meeting
	19	Progress report #2
	26	No meeting
	27	No meeting
Nov	2 or 3	End of semester presentations (W and Th)
	8 or 9	End of semester presentations (T and W)
	16	No meeting Progress report #3
	23	(Thanksgiving Break)
Dec	1	No meeting

Key Spring Dates:

Practice Final Presentations – Week of March 5th – all data should be gathered

Final Presentations – Week of March 26th – all analysis should be complete

Poster Presentations – Friday April 13th – Everything done!

Some General Policies

1. For the most part, the Biology Department will pay **reasonable costs** for supplies and equipment for your capstone research projects. However, students are responsible for all costs associated with photocopying, film and development, presentation material, computer literature searches, transportation, and any other non-technical supplies.
2. Attendance at class meetings is mandatory. Attendance will be taken during each meeting & each unexcused absence will cause a deduction of 5% on the final grade. Participation (or lack thereof) in class discussions will be considered when final grades are assigned.
3. Students are personally responsible for the planning and progress of their capstone research projects. Each student is expected to **consult with his/her faculty supervisor on a regular basis.**
4. Assignments are assumed to be the exclusive work of individual students; plagiarism will be rewarded with a significant grade penalty or a “0,” on either the specific assignment or in the course, at the instructor’s discretion. Plagiarism includes, but is not limited to, having someone else write any portion of your capstone paper, and extracting text with little or no paraphrasing from other sources, even for cited sources. While not *technically* plagiarism, doing a poor job of citing references such that it is difficult to find the original source and compare it to your text will also be considered as plagiarism as the net result is that it becomes impossible to tell if plagiarism has occurred. This would include referencing the wrong source, omitting page numbers, referring to the wrong page number,

using the wrong information in citing a reference or using the wrong format. In general, one should paraphrase material, with proper referencing, rather than using direct quotations from published sources.

Oral presentation of capstone projects

All students will make oral presentations of their senior capstone projects to the Department, and the presentations are also open to the public. The presentations should be 15 min in length, to be followed by 5 minutes of questions. Visual aids for the presentations will be prepared using PowerPoint. Dress professionally.

Capstone Progress Reports

These will be an evaluation by your project supervisor of the progress you have made to date. Due dates will be:

- 1st Sept 21
- 2nd October 19
- 3rd November 16

Failure to turn in a progress report will result in the loss of 20 Points from your final grade. It is your responsibility to assure that you can meet with your faculty supervisor early enough to have the progress report completed and turned in on time.

490 expectations

1. Oral presentation, as described above.
2. Poster Presentation

Biology 490 students will prepare a poster presentation of their capstone projects. The poster will be about 32 x 42". More details about posters and instructions on using the big printer will be given during the spring semester.

3. Evaluation of 490 Research Project

Your faculty supervisor and the capstone instructor will develop an overall evaluation of your research project based upon the following criteria:

- a. Quality of experimental design, e.g.: Did the project have a testable hypothesis and proper controls? Were the experiments properly designed to evaluate the hypothesis? Was the scientific literature adequately reviewed and consulted to allow successful completion of the project?
- b. Sufficiency of data collection, e.g.: Was adequate data collected to evaluate the hypothesis? Did experiments include sufficient replication? Were experiments repeated and/or redesigned when necessary?
- c. Appropriateness of data analysis and interpretation, e.g.: Were results appropriately analyzed statistically, and carefully assessed and interpreted? Did interpretation include sufficient consideration of relevant published literature?
- d. Time management, e.g.: Was sufficient time given to the completion of the project, unavoidable delays due to experimental contingencies notwithstanding?
- e. Conduct of project, e.g.: Were work space, supplies and, if used, animals, properly maintained and cared for?
- f. Lab notebook: were experimental procedures adequately described and results recorded? Could this record of your work be used to repeat your experiments?

Grading Policy

Your final grade will be determined for work performed over the course of the Fall and Spring. Although interim grades will be posted, students will receive an 'I' at the end of the Fall semester. If for some reason not exactly 800 points are assigned, then the final grade will be calculated on the basis of the points actually assigned.

Assignment	Points	Due date	Grading Scale
Presentation of project status	50	mid Sept.	97 - 100% = A+
End of semester presentation	50	mid. Nov.	93 - 96% = A
Key paper presentation	50	mid. Jan.	90 - 92% = A-
Progress reports (3 @ 20 pts)	60		87 - 89% = B+
Practice final presentation	50	Early March	83 - 86% = B
Final presentation	150	Late March	80 - 82% = B-
Project completion	300	mid. April	77 - 79% = C+
Lab notebook	50	late Nov. & mid-April	73 - 76% = C
Class participation	40		70 - 72% = C-
			67 - 69% = D+
			63 - 66% = D
			60 - 62% = D-
			< 60% = F
	Total:	<u>800</u>	

Late assignments

Late assignments will be penalized 10% per day. A missed oral presentation will receive a '0'.

Disabilities

Any student needing accommodations due to a documented disability should notify the instructor AND the Academic Resource Center (Andrews Hall, Third Floor, 376-4700) at the beginning of the semester for further instructions.

Academic Dishonesty

Assignments are assumed to be the exclusive work of individual students--plagiarism will be rewarded with a significant grade penalty or a '0', at the instructor's discretion. Academic dishonesty within the academic community is a very serious matter, because dishonesty destroys the basic trust necessary for a healthy education environment. Academic dishonesty is any treatment or representation of work as if one were fully responsible for it, when it is in fact the work of another person. Academic dishonesty includes cheating, plagiarism, theft, or improper manipulation of laboratory or research data or theft of services. In scientific writing, plagiarism includes verbatim copying from literature sources whether the information is cited or not. A substantiated case of academic dishonesty may result in disciplinary action, including a '0' on the assignment, a failing grade in the course, or expulsion from the College. All cases of plagiarism are reported to the Academic Dean.

The "Major Field Achievement Test"

You are required to take the major fields exam. As part of the Assessment Plan for the Biology Department at Marietta College, the "Major Field Achievement Test" in Biology is administered to all senior biology majors. The format of this exam includes sections in "Cellular and Subcellular Biology," "Organismal Biology," and "Population Biology: Ecology and Evolution," which are closely aligned with how the biology program is organized. Since 1996, the Biology Department has administered this exam to graduating seniors as part of the Departmental assessment plan. Although the results of this exam will not in any way be used as a factor in the grade for this course, failure to take the exam could result in a significantly lower grade for the course. This exam will be administered near the end of the Spring semester. There is no cost to you for taking the exam –the college pays for it.

We must, follow very strict rules for taking the test. These rules are given to us by the company that produced the exam, and are every bit as serious as those for the MCAT and GRE's, and just as inflexible. Everyone needs to attend the session when the exam is given. This test period must take priority over other activities, just as would the GRE or MCAT if you were taking one of them. Although this test is designed to test what you have learned over the four years of your college education in biology, you are encouraged to review relevant materials during this semester before taking the exam.

Why should you do your best on this exam? First, as a matter of personal, professional and institutional pride. Second, because the results are used to modify the curriculum for students in the future. In both cases, having Marietta College do well (both now and in the future) reflects well on you as a graduate and may have a tangible effect in your getting a job or promotion someday. The faculty do see the individual scores as well, and can also use that information in writing future letters of recommendation for you as you apply for jobs or to graduate schools. Finally, the results might help you identify weak areas in your education that you might want to strengthen or review before graduate school.

Capstone Progress Report

Student Name:

Faculty Supervisor:

Mark "n/a" for any question that does not apply

Status of literature review

	<u>1st progress report</u>	<u>2nd progress report</u>	<u>3rd progress report</u>
	poor	poor	poor
	excellent	excellent	excellent
1. Development of research strategy (key words, use of bound and on-line indices)	_ _ _ _	_ _ _ _	_ _ _ _
2. Sufficiency of 1E & 2E sources identified	_ _ _ _	_ _ _ _	_ _ _ _
3. Number of relevant sources obtained	_ _ _ _	_ _ _ _	_ _ _ _
4. Reading and comprehension of relevant literature (note taking)	_ _ _ _	_ _ _ _	_ _ _ _

Status of research project (490 only)

1. Quality of hypothesis or experimental question	_ _ _ _	_ _ _ _	_ _ _ _
2. Researching of procedures has researched equipment, supplies, etc	_ _ _ _	_ _ _ _	_ _ _ _
3. Planning of investigations has an acceptable written plan	_ _ _ _	_ _ _ _	_ _ _ _
4. Progress of actual research	_ _ _ _	_ _ _ _	_ _ _ _

Status of research paper (480 only)

1. Definition of topic & question	_ _ _ _	_ _ _ _	_ _ _ _
2. Organization or outlining of subject matter	_ _ _ _	_ _ _ _	_ _ _ _
3. Writing and revision of drafts	_ _ _ _	_ _ _ _	_ _ _ _

____ pts / 20

____ pts / 20

____ pts / 20

Place written comments on back

