

BIOL 498 Research Seminar

Lecture Instructor: Dr. Geraldine Grant

Credits: 2

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No textbook is required for this course.

COURSE OBJECTIVES:

This course is for students enrolled in the biology research semester program. The goal is to enhance understanding of current topics in biology, especially those related to research being conducted by students in the research semester program. During this course the student will learn to read, assimilate, understand and critique basic scientific papers. The student will also learn to how to present scientific research to an audience.

COURSE FORMAT:

Current primary research articles from scientific literature will be selected either by the instructor or student. These articles will be approved (by the instructor) and posted on Blackboard (login: at <https://mymasonportal.gmu.edu> under the “courses” tab) and /or emailed during the semester. Every student must frequently check his/her GMU e-mail to ensure receiving messages in a timely fashion.

Students are expected to:

- Read the assigned articles and write a summary before each class session.
- Each summary should address the questions mentioned below in Article Summaries/Homework, and be at least one page (double-spaced, font size 12).

This homework is due prior to the class in which the article will be discussed. Students will receive each article at least one week before the discussion date.

Please come to class prepared to discuss the articles – you will also be asked to work in groups. Your level of participation during class will determine a significant portion of your grade. Expectations for the article summaries and an explanation of how class participation will be evaluated will be reviewed during the first class meeting.

As the semester progresses, the seminar instructor will consult with your research mentor and solicit scientific literature that you should read. On a rotating basis,

students will be asked to present and lead a discussion on papers suggested by his/her research mentor. Near the end of the semester, each student will prepare a Poster on her/his own research.

During the last week of the semester, students are required to prepare these posters to be presented at an organized “Research Day” event to take place at the Prince William campus on first Tuesday of December and at the Fairfax campus on Thursday of that week – you will be informed of the exact details closer to the event.

COURSE POLICIES:

- Abide by the honor code (see: <http://academicintegrity.gmu.edu/honorcode>)
- Avoid plagiarism (inadvertent or otherwise): The article summaries should be your own work.
- Late assignments will not be accepted.
- There are no extra credit assignments for this course.
- Lack of participation (either through absence or silence in class) will negatively affect your grade.
- Email your summaries to your instructor using your GMU email accounts.

GRADING:

Homework/Summaries: 25% of grade
Presentations: 65% of grade
 Group presentation 15% of grade
 Individual presentation 30% of grade
 Poster Presentation 20% of grade
Participation: 10% of grade

A+	>95%
A	92-95
A -	90-92
B+	88-90
B	82-88
B-	80-82
C+	78-80
C	70-78
D	60-70
F	<60

Assignments/Grading

The student will be evaluated on the completion of the following assignments:

Article Summaries/Homework (25% of final grade)

- a) Students are required to read and submit (via assignments on Blackboard) a written summary **for each** paper to be presented in class – no later than 12 hours prior to the presentation. The summary must answer the following questions

- What was the Question/Hypothesis this group was trying to answer?
 - How did they go about proving/disproving this hypothesis?
 - What did they conclude?
 - How is this work important to the scientific community and the community at large?
- b) Student will also develop an abstract for a given paper which has no abstract (See schedule).

Presentations: (65% of final grade)

1. Student will be required to select a primary research paper which they will submit for potential presentation. You may find this article on your own, or you may choose from editorials and newspaper reports that Dr Grant will provide. All selected articles must be submitted for approval to Dr Grant. The science librarian will assist you in finding these articles if you have difficulties.
2. In weeks 5-9 students will be split into groups. Each group will be assigned a paper to present. **Students will work together as a team** to understand and breakdown this paper. Each group will generate a PowerPoint presentation of said paper. Each student within the group will be assigned one section (Introduction, Methods, Results and Discussion/Conclusion) and present as a team (15%).
3. Students will also be graded on a second presentation in which they present, in 30 – 35 min their chosen paper (30%).
4. Students will be required to complete a poster of their chosen individual research (20%).

Presentation – Group and individual – will use the rubric for student presentation.

Class Schedule for BIOL498

Week	Details	Assignment
1:	Introduction/Overview How to find a paper	Choose a paper by Sept 21 st – must be approved by Dr Grant
	NO CLASS –	Labor Day
2:	Anatomy of a paper: Intro Materials/Methods/Techniques	
3:	Results Discussion/conclusions	
4:	Bibliography Abstract	Given a paper without the abstract – write the abstract due end of semester
5:	Groups formed and papers assigned. Presentation and Poster format Zotero Training	
6:	Work on presentation in class as groups.	
7:	<u>Group 1 presents</u> <u>Group 2 presents</u> <u>Group 3 presents</u> <i>Issues and Questions</i>	Summary due <12 hours before class Peer evaluation – due end of class.
8:	New Groups formed and new papers assigned. Work on presentation in class as groups.	Summary due <12 hours before class Peer evaluation – due end of class.
9:	<u>Group 1B presents</u> <u>Group 2B presents</u> <u>Group 3B presents</u> <i>Issues and Questions</i>	Summary due <12 hours before class Peer evaluation – due end of class
10:	Individual Presentations Student 1 Student 2 Student 3	Summary due <12 hours before class Peer evaluation – due end of class
11:	Individual Presentations Student 4 Student 5 Student 6	Summary due <12 hours before class Peer evaluation – due end of class
12:	Individual Presentations Student 7 Student 8 Student 9	Summary due <12 hours before class Peer evaluation – due end of class
13:	Individual Presentations Student 10 Student 11 Student 12	Summary due <12 hours before class Peer evaluation – due end of class <u>Posters should be printed this week..email Dr. Grant your PowerPoint.</u> <u>Abstract assignment due to Dr. Grant by email.</u>
15.1:	Students Present posters at PW Bull Run Hall	
15.2:	Students Present posters at Fairfax Exploratory Hall	

STUDENT SEMINAR EVALUATION RUBRIC BIOL498

Presenter: _____ Evaluator: _____ Date: _____

Evaluate the student's research presentation employing the following range-scored criteria (best is on right)

	Inadequate	Average	Admirable	Outstanding	SCORE
<u>Knowledge and Content</u>	1	2	3	4	
Organization of presentation	Hard to follow; sequence of information jumpy	Most of information presented in sequence	Information presented in logical sequence; easy to follow	Information presented as interesting story in logical, easy to follow sequence	
Background content	Material not clearly related to topic OR background dominated seminar	Material sufficient for clear understanding but not clearly presented	Material sufficient for clear understanding AND effectively presented	Material sufficient for clear understanding AND exceptionally presented	
Methods	Methods too brief or insufficient for adequate understanding OR too detailed	Sufficient for understanding but not clearly presented	Sufficient for understanding AND effectively presented	Sufficient for understanding AND exceptionally presented	
Contribution of work to science and the world	Significance not mentioned or just hinted	Significance mentioned	Significance explained	Significance exceptionally well explained	
Knowledge of subject	Does not have grasp of information; answered only rudimentary questions	At ease with information; answered most questions	At ease; answered all questions but failed to elaborate	Demonstrated full knowledge; answered all questions with elaboration	
<u>Presentation Skills</u>					Score
Graphics (use of Powerpoint)	Uses graphics that rarely support text and presentation	Uses graphics that relate to text and presentation	Uses graphics that explain text and presentation	Uses graphics that explain and reinforce text and presentation	
Mechanics	Presentation has more than 10 misspellings and/or grammatical errors	Presentation has no more than 5 misspellings and/or grammatical errors	Presentation has no more than 2 misspellings and/or grammatical errors	Presentation has no misspellings or grammatical errors	
Eye Contact	Reads most slides; no or just occasional eye contact	Refers to slides to make points; occasional eye contact	Refers to slides to make points; eye contact majority of time	Refers to slides to make points; engaged with audience	
Elocution – not ability to speak English language	Mumbles Voice is low; difficult to hear	Voice fluctuates from low to clear; difficult to hear at times	Voice is clear with few fluctuations; audience can hear well most of the time	Voice is clear and steady; audience can hear well at all times	
Length and Pace	Short; less than 20 min Spoke too fast or had nothing to say!!	long >50 min OR dragging in parts	Adequate 30-35 min Most of the seminar well-paced	Appropriate (40 min) Well-paced throughout	