

BSC4936: Critical Analysis of Biological Research

Instructor Information

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Description

Critical analysis of current life sciences research through online discussions of research seminars and peer reviewed scientific publications.

Website

Access this course website through UF e-Learning Services (<https://lss.at.ufl.edu/>). Log in using your Gatorlink username and password. The software used to host the website is "Sakai".

Required Materials

1. Reliable internet access that will allow you to complete and submit assignments on time. Microphone and camera for recording presentations and attending office hours by Skype. Appropriate software including Microsoft Office.
2. Means of transportation to/from campus once at the end of the term to take the biology Major Field Test.

Course Format

The class will be divided into groups of 3 or 4 (rarely 5) people, and involves intensive group interaction. For each of the 10 modules in this course, you will read a peer-reviewed journal article, watch a research seminar online, participate in a *Virtual Experience Interactive Learning Simulations* (VEILS) program, or take the online Biology Major Field Test. Specific online assignments follow each of these activities. Specific instructions for each module are in the "Lessons" section of Sakai. Please read the instructions before beginning a new module. You are required to take a standardized exam on campus. This is the only time you will need to come to campus.

Student Conduct & Effective Participation

The purpose of this course is to give you opportunities to engage in scientific discussion, which are necessary components of scientific thinking and discourse. You may find yourself in heated debates with your peers. This is ok and an indication that you are thinking critically about your and others' claims. In order to maintain a culture of respect in our course, please follow two basic guidelines. First, back up your claims with evidence and/or scientific explanation. Second, keep the discussion about the scientific ideas put forth, not about the people presenting them. Offensive comments will not be tolerated in this course. In order for you to get the most out of these interactions and have your grade reflect active participation, you should follow these basic strategies for success in this course:

1. Enter all the deadlines (including times) on your personal calendar. Late work will only be accepted at the discretion of the instructor and will never be accepted without penalty.
2. Begin each new module by reading all the instructions in the "Lessons" section of Sakai.
3. Read the article/watch the seminar early in the module and post a well-written summary in the "Discussion" section of Sakai. You may want to take notes while reading articles/watching seminars.
4. Check the discussion board for the current module at least every other day and respond promptly to comments made on your posts.
5. When discussing an article or seminar, make connections between its content and your real life. The point of the discussions is to share what you think. These discussions are meant to be casual and thought-provoking. If you find a website that relates to the topic, share it. If you have a funny story that relates, tell it, if you feel comfortable. Do not be afraid to go outside of the context of the article/seminar to have an authentic discussion of its importance and relevance to your life.
6. Make your comments to your peer's posts about the science and their ideas, not the writing quality. Be assertive in your posts and share your original thoughts. If the sum of your posts amounts to you agreeing with your group mates' or other scientists' claims and not stating anything unique, you should not expect to receive full credit.
7. Remember that your interactions are meant to be *discussions*, not statements. Therefore, there should be substantial back-and-forth between group members over the course of every module. In other words, do not simply state what you think but respond to what others think.

8. When discussing scientific topics, it is inevitable that someone will make a comment that reflects a misconception about a scientific principle. When this happens it is the responsibility of the group to correct the misstatement while still maintaining a respectful conversation so that the discussion can continue productively.

Assignments

Please see the “Lessons” section of Sakai for detailed instructions. All assignments are submitted online using Sakai and include the following:

Ice-Breaker Activity

Occurs during the first week of the course.

Sign-up for Biology Major Field Test

Occurs during the first week of the course.

Quizzes

Quizzes for Modules 1, 2, 6, and 7 are administered through the “Assessments” section of Sakai. All quizzes are timed and have the “force completion” function turned on, you may not return to the quiz after it times out. The Module 1 Syllabus Quiz is easy in that you may have access to the syllabus while taking the quiz. The Module 1 Ethics Pre-Quiz is easy in that it is not graded; you receive 10-points for satisfactorily answering all the questions to the best of your ability. Failure to take the Ethics Pre-Quiz will result in the assignment of 0 points. The Module 2 quiz is based upon the online interactive video training on ethics in research. Quizzes for Modules 6 and 7 are difficult because it is assumed that you will have a copy of the paper or notes from the seminar available during the quiz. Access to the quizzes is limited to the last two days, or so, of a module.

Ethics Decision-Making Discussion

After participating in the Module 2 ethics decision-making activity students will post discussions in the “Discussion” section on Sakai.

Summaries

Summaries for Modules 3 and 4 are submitted to the “Discussion” section of Sakai. Deadlines for reading a paper or watching a seminar and for posting your summary, peer reviews, and responses to peer reviews are enforced. All papers and seminars are available in the “Resources” section of Sakai.

PowerPoint Presentation

A PowerPoint presentation with embedded audio based upon a research article or seminar is posted in the Module 5 “Discussion” section of Sakai. Minimum length is 10 minutes, maximum length is 12 minutes and minimum number of slides is 20.

Peer Reviews

Peer reviews of your fellow students’ summaries and PowerPoint presentations for Modules 3, 4, and 6 are posted in the “Discussion” section of Sakai. Satisfactory peer reviews involve stating constructive criticism about what can be improved, as well as offering praise for what was done well.

Responses to Reviews

Responses to peer reviews for Modules 3, 4, and 5 are posted in the “Discussion” section of Sakai. Satisfactory response to your peers’ critique should include why or why not the critique was valid, and your correction if needed.

Collaboration in Writing Group Papers

Members of each group collaborate in the writing of papers in Modules 8 and 9 based on an assigned article or seminar using the “Wiki” section of Sakai. The wiki tool allows me to compare and evaluate the contributions of each group member and award appropriate points.

Group Papers

The first and final versions of the paper created with the wiki tool for Modules 8 and 9 are submitted by each group member via the “Assignments” portion of Sakai. Each group member will receive the same grade.

Responses to Instructor Reviews of Group Papers

Responses to the comments from your instructor regarding the two group papers are posted in the “Discussion” section of “Wiki” tool for Modules 8 and 9.

National Biology Major Field Test

This is a three-hour online test given at scheduled times in 1317/1341 Turlington Hall. The test is written by the Educational Testing Service (ETS), which is the same company that administers many of the standardized exams that you are familiar with: SAT, MCAT, GRE, etc. The reason we are administering this exam is because in order for the University of Florida to maintain its accreditation, we need to measure student learning outcomes. The exam covers four major areas of biology: 1) cell biology, 2) molecular biology and genetics, 3) organismal biology and, 4) population biology, evolution and ecology. The test covers much of what you have learned over the course of your studies in biology. Although you do not need to study for the exam, you may benefit from reviewing your introductory biology text. Points awarded for your score on the exam will be based on your percentile score not the “raw” score (see the table below). Your percentile score is similar to a “ranking” that allows you to compare yourself with other senior biology students across the country. If you score well, your score should be included on your curriculum vita to indicate

how you compare to other applicants (for jobs, graduate school, etc.) who have the same degree as you. It is in your best interest to try to do well on this exam.

Honesty Policy

All students registered at the University of Florida have agreed to comply with the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." In addition, on all work submitted for credit the following pledge is either required or implied: "*On my honor I have neither given nor received unauthorized aid in doing this assignment.*" If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at <http://www.dso.ufl.edu/judicial/procedures/academicguide.html>.

UF Counseling Services

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

1. UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
2. Career Resource Center, Reitz Union, 392-1601, career and job search services.
3. Many students experience test anxiety and other stress related problems. "A Self Help Guide for Students" is available through the Counseling Center (301 Peabody Hall, 392-1575) and at their web site: <http://www.counsel.ufl.edu/>.

Accommodation for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drp/services/>. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

Software Use

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Research Papers and Seminars

Research Papers and seminars are stored in the "Resources" section of Sakai.

Grades

A total of 230 points are possible in the course. Please refer to the attached "Assignments" table for details.

Percentage	Letter Grade	GPA equivalent		
≥ 90.00	A	4.0		
86.7 – 89.9	A-	3.67		
83.3 – 86.6	B+	3.33		
80.0 – 83.2	B	3.0		
76.7 – 79.9	B-	2.67		
73.3 – 76.6	C+	2.33		
70.0 – 73.2	C	2.0		
66.7 – 69.9	C-	1.67		
63.3 – 66.6	D+	1.33		
60.0 – 63.2	D	1.0		
56.7 – 59.9	D-	0.67		
< 56.7	E	0		
For more information on grades and grading policies, please visit: http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html			*Percentile Score on MFT-Biology	Points (out of 20)
			85 or above	20
			75-84	19
			65-74	18
			55-64	17
			below 55	16
			Failure to take exam	0

Summary of Activities, Points and Due Dates for BSC 4936 Critical Analysis of Biological Research: Spring 2014						
Modules Schedule						
Length (days)	Begin	End	Activities	Points	Due Date 11:55PM	Notes
Module 1: Introductions						
6	6-Jan	12-Jan	Read syllabus (S)*	0	6-Jan	If you don't select a capstone exam time one will be assigned to you and you will not receive the 5 bonus points.
			Ice-breaker (D)	5	8-Jan	
			Take Quiz 1 on syllabus (Q)	10	12-Jan	
			Take Ethics Pre-Quiz (Q)	10	12-Jan	
			Sign-up for capstone exam time (SU)	5	12-Jan	
Module 2: Ethics in Research						
10	13-Jan	23-Jan	Read instructions for this case study (L)	0	13-Jan	Carefully participate in the multiple-pathway video and study the ethics tutorial on the home page. Focus most of your time on Kim Park's character. The discussion is worth 10 points, the quiz is difficult and worth 20 points.
			Do ethics tutorial on "The Lab" homepage	0	14-Jan	
			Begin Discussion & Participate in online interactive video (D)	0	17-Jan	
			Complete Discussion (D)	10	23-Jan	
			Take a quiz on the case study (Q)	20	23-Jan	
Module 3: Discuss and Critique a Published Research Paper						
7	24-Jan	31-Jan	Read article (R)	0	24-Jan	You must review each of your group members' summaries. You must respond to each of your group members' reviews of your summary.
			Post your summary of the article (D)	10	26-Jan	
			Peer-review group member's summaries (D)	5	29-Jan	
			Respond to each peer review (D)	5	31-Jan	
Module 4: Discuss and Critique a Professional Seminar						
7	1-Feb	8-Feb	Watch research seminar (R)	0	1-Feb	You must review each of your group members' summaries. You must respond to each of your group members' reviews of your summary
			Post your summary of research seminar (D)	10	3-Feb	
			Peer-review group member's summaries (D)	5	6-Feb	
			Respond to each peer review (D)	5	8-Feb	
Module 5: Present a Peer-reviewed Article using PowerPoint						
11	9-Feb	20-Feb	Read article (R)	0	9-Feb	Your presentation MUST have automatic audio embedded into the presentation. Please do not submit separate mp3 files for each slide. Length must be between 10 and 12 minutes and have a minimum of 20 slides.
			Post and submit PowerPoint (D) (A)	10	16-Feb	
			Peer-review group presentations (D)	5	17-Feb	
			Respond to each peer review of your presentation (D)	5	20-Feb	
Module 6: Analyze a Published Research Paper						
7	21-Feb	28-Feb	Read article (R)	0	21-Feb	The quiz is difficult and requires that you understand the article. You may use notes.
			Take quiz (Q)	10	27-Feb	
7	1-Mar	8-Mar	SPRING BREAK			
Module 7: Analyze a Professional Seminar						
7	9-Mar	16-Mar	Watch seminar (R)	0	9-Mar	The quiz is difficult and requires that you take notes during the seminar. You may use notes.
			Take quiz (Q)	10	16-Mar	
Module 8: Collaborate to Write a Group Paper						
12	17-Mar	29-Mar	Read paper (R)	0	17-Mar	There are two types of grades for this module. <i>Group grades</i> are given for the paper and its revision. Each member of the group receives the same group grade. <i>Individual grades</i> are given for discussions and contributions to the group paper based upon participation recorded in the "History" portion of the Wiki tool.
			Discuss paper (W)**	5	20-Mar	
			Individual contributions to group paper (W)**	10	22-Mar	
			Submit group paper for grading (A)	5	22-Mar	
			Discuss instructor's comments (W)**	5	26-Mar	
			Contributions to revision of group paper (W)**	5	29-Mar	
			Submit revised group paper for grading (A)	5	29-Mar	
Module 9: Collaborate to Write a Paper						
12	30-Mar	11-Apr	Watch seminar (R)	0	30-Mar	There are two types of grades for this module. <i>Group grades</i> are given for the paper and its revision. Each member of the group receives the same group grade. <i>Individual grades</i> are given for discussions and contributions to the group paper based upon participation recorded in the "History" portion of the Wiki tool.
			Discuss seminar (W)**	5	2-Apr	
			Individual contributions to group paper (W)**	10	4-Apr	
			Submit group paper for grading (A)	5	4-Apr	
			Discuss instructor's comments (W)**	5	8-Apr	
			Contributions to revision of group paper (W)**	5	11-Apr	
			Submit revised group paper for grading (A)	5	11-Apr	
Module 10: Take a Standardized Exam						
5	12-Apr	17-Apr	Biology Major Field Test	20	23-Apr	1317/1341 Turlington Hall on date/time you selected at beginning of semester.
Total Points				230		
* S=Syllabus; SU=Sign-up; L=Lessons; R=Resources; D=Discussions; A=Assignments; Q=Quizzes; W=Wiki						
** Indicates grading on group papers where individual group members may receive different scores based upon participation in discussion and collaborative writing. Evaluation is done using the "Discussion" and "History" functions of the Wiki tool.						
If the content and schedule of this syllabus change, students will be notified and an updated syllabus will be posted.						