

# Biology 211

## Biodiversity, Ecology, and Conservation Biology

### College of Charleston, Spring 2016

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*Lecture: Section 7, Tues/Thurs 5:30-6:45PM – HWWE 307*

*Discussion: Section 7, Thurs 2:10-5:10PM – HWWE 307*

*Instructor: Walter Blair*

*Office: HWWE 309 or 311 for office hours, and 65 Coming St. Rm 102 by appointment*

*Office Hours: Mon/Wed/Fri 9:30-10:30AM, 12:30-1:30PM, and by appointment*

*Email: wtblair@cofc.edu*

### Course Overview

#### Course Description

A foundation course for intermediate level biology majors. Students will explore synthetic biological concepts, including evolution, population-community-ecosystem ecology, behavior, biodiversity, and conservation. In a weekly, one-hour recitation section, students will be required to read, discuss and critique scientific literature (both popular and primary) related to these topics.

#### Shared Goals

Instructor	Students
Review key material in lecture.	Familiarize yourself with material and then come to lecture engaged.
Guide your efforts to conduct and present biological research.	Be willing to fail at first.
Foster collaboration.	Be thoughtful and considerate of your classmates.
Be available for help out of class.	Let me know when you need help.

#### Learning Objectives:

The learning objectives of this course are to become familiar with ways organisms interact with the environment, to know fundamental principles of ecology, evolutionary and conservation biology, and to learn about the three domains of biodiversity on Earth. In addition, our learning objectives include:

- Developing critical thinking skills
- Learning about quantitative models in biology as they relate to ecology, conservation and evolution
- Learning to synthesize and work with biodiversity data from groups ranging from bacteria to mammals
- Writing skills
- Develop your toolbox of scientific methods including:
  - formulate questions and hypothesis generation,
  - data organization,
  - data analyses and evaluation of statistical hypotheses,
  - working with quantitative models
  - graphing and interpretation of graphs
  - reading primary literature in biology
  - synthesizing, summarizing and appropriate citation of primary literature
  - working independently and in collaborations with other students
  - presenting findings in written, poster and oral formats

## Lecture

BIOL 211/211D will continue building your foundation in the biological sciences and scientific process. My goal with this class is to combine traditional lecture with group explorations that encourage you to think and explore topics that interest you in a variety of ways.

Lectures will be based on PowerPoint presentations that will present key concepts and foster in-class discussions. Please note that the slides themselves do not contain everything you need to know – much of what you need to learn will be discussed in class. Taking good notes during lecture is crucial to your success! Slides will be posted in .pdf format to OAKS shortly before each class, so the best way to prepare for class is to complete homework assignments, keep up with your work in lab, spend time with the textbook, and bring everything you need to take your own notes during class.

Your participation in regular group activities and discussions will also be important for your success in this class. Your responsibilities during group work are to work hard, stay positive, and treat your classmates with respect. You'll want to take notes on what you learn and what we discuss as a class during these activities.

## Required Materials

As with Biol 112, we are continuing in Freeman's Biological Science (Fifth Edition). All other required lecture materials will be made available on OAKS or hyperlinked in

presentations. If you own a different edition of the textbook, please note that chapter numbers vary from the most recent fifth edition.

It is important to note that OAKS will be your go-to for accessing course materials, finding assignment instructions and deadlines, and submitting assignments. It is therefore important to be comfortable using OAKS as well as sending and receiving Microsoft Office, OpenOffice, or equivalent files (eg .doc, .ppt). Some project assignments will require you to print hard copies and bring them to class, so it is also important that you have access to a printer.

## Exams

You will take three regular exams for this course followed by a cumulative final exam. We will talk more about each exam later in the semester, and I will do my best throughout the semester to help you prepare for the types of questions that will be asked. I will hold out-of-class review sessions before each exam.

You will have the opportunity to replace one of the three regular exams with your final exam grade if, and only if, you satisfactorily complete your own practice exam and accompanying key for all four exams. The requirements for these practice exams will be explained later, and they are otherwise optional.

I will always make an effort to be available for office hours and appointments, but remember that things get crazy right before an exam! Don't wait until the week of an exam if you need individual help understanding the material. Review class material as you go and try to clear up confusion early on.

## Projects

You will complete three projects coming out of your work in discussion that will give you practice accessing primary literature, doing biological research, and presenting that research to your peers. I will provide goals and guidelines for each project as we go. Please note that the overall grade for each project will be composed of not only your final product but also graded outlines, drafts, and other assignments along the way.

## Grading

The goals of this course are to 1) increase your knowledge of biological concepts, 2) gain experience reviewing, doing, and presenting biological research, and 3) improve your ability to collaborate with your fellow scientists. Below is a detailed breakdown of the graded components that will help us accomplish these goals. As you progress in your careers, you'll find that research and collaboration become more and more important than taking tests...one step at a time!

<b>Grade Item</b>	<b>% of Final</b>
<b>Knowledge</b>	
Exam 1	10
Exam 2	10
Exam 3	10
Final Exam	10
<b>Research</b>	
Project 1	15
Project 2	10
Project 3	15
<b>Collaboration</b>	
Lecture participation	10
Discussion participation	10

<b>Score</b>	<b>Grade</b>	<b>Score</b>	<b>Grade</b>
93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	0-59	F

## Course Policies

### Attendance

Lecture and Discussion are mandatory and will both include individual and group activities that determine your participation grade. It is the student's responsibility to properly document all absences, obtain notes and handouts from other students, and contact me about any make up work.

### Makeups & Late Assignments

A valid, documented excuse (see above) must be received in order to schedule a make-up exam or to submit an excused late assignment. Assignments that are due in class are due as soon as class starts and are considered late after that time. Missed tests and late assignments that are unexcused cannot be made up. The maximum possible points that can be earned for a late assignment will decrease by one letter grade per day.

### Honor Code

On all work submitted for credit by students at CofC, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The legal code of the College specifically prohibits plagiarism, cheating, bribing, conspiracy, misrepresentation, and fabrication. If it is proven that any student has committed any of the above infractions of the honor code, then that student will automatically fail the course with an XF. In addition, violations of the Academic Honesty Guidelines shall result in judicial action. Students should be aware that unauthorized collaboration (working together without permission) is a form of cheating.

For more information about plagiarism, please visit [www.plagiarism.org](http://www.plagiarism.org) and talk to me if you have questions or concerns.

## **Academic Assistance for Students**

### **Accommodation for Disabilities**

To request classroom accommodation, you must first register with the Center for Disability Services at the beginning of the semester. This office will provide you with documentation that you will then provide to us when you request accommodation. For more information, please see <http://disabilityservices.cofc.edu/>

### **Additional Resources**

Counseling Resources, a writing lab, and a career resource center are all available to CofC students and are staffed with trained professionals. I encourage you to utilize the Center for Student Learning's (CSL) academic support services for assistance in study strategies, speaking & writing skills, and course content. They offer tutoring, Supplemental Instruction, study skills appointments, and workshops. Students of all abilities have become more successful using these programs throughout their academic career and the services are available to you at no additional cost. For more information regarding these services please visit the CSL website at <http://csl.cofc.edu> or call (843)953-5635.

Walk-in Science Tutoring Lab - The Center for Student Learning (CSL) now has a walk-in science tutoring lab. Students can use the walk-in lab during the scheduled times of operation which can be found at <http://csl.cofc.edu/labs/>. Tutoring is available to all Biol 101/102/111/112/211 students, should they need additional help with specific course concepts.

## Course Schedule

<b>Date</b>	<b>Lecture / Discussion</b>	<b>Topic</b>	<b>Assignment Due</b>
1/7	1 / Discussion 1	Ch. 25 Natural Selection	
1/12	2	Ch. 25 Natural Selection	Disc-Plagiarism Exercise
1/14	3 / Discussion 2	Ch. 26 Evolution	Disc-Journal Article 1
1/19	4	Ch. 26 Evolution	Disc-Phylogeny Puzzle Part III
1/21	5 / Discussion 3	Ch. 27 Speciation	Disc-P1 Factbook Presentations
1/26	--	--	
1/28	6 / Discussion 4	Ch. 27 Speciation	Disc-P1 TBD
2/2	7	Unit 1 Synthesis	
2/4	8 / Discussion 5	<b>Exam 1 @5:30pm</b>	<b>Exam 1 @ 5:30pm</b>
2/9	9	Ch. 28 History of Life Ch. 29 Prokaryotes	
2/11	10 / Discussion 6	Ch. 30 Protists	Disc-P1 Draft Presentation
2/16	11	Ch. 31 Algae and Plants	
2/18	12 / Discussion 7	Ch. 32 Fungi	Disc-P1 Oral Presentation
2/23	13	Ch. 33 Intro to Animals	
2/25	14 / Discussion 8	Ch. 34 Protostomes	Disc-Journal Article 2
3/1	15	Ch. 35 Deuterostomes	
3/3	16 / Discussion 9	<b>Exam 2 @ 5:30pm</b>	<b>Exam 2 @5:30pm</b>
3/6	–	–	Disc-P2 Draft Paper
3/8		<i>Spring Break</i>	
3/15	17	Ch. 52 Intro to Ecology	
3/17	18 / Discussion 10	Ch. 53 Individuals	Disc-P2 Final Paper
3/22	19	Ch. 53 Individuals	
3/24	20 / Discussion 11	Ch. 54 Populations	Disc-P3 Hypothesis Presentations
3/29	21	Ch. 54 Populations	
3/31	22 / Discussion 12	Ch. 55 Communities	Disc-P3 Revised Hypothesis & Draft Outline
4/5	23	Ch. 55 Communities	
4/7	24 / Discussion 13	Ch. 56 Ecosystems	Disc-P3 Draft Proposal
4/12	25	<b>Exam 3 @5:30pm</b>	<b>Exam 3 @5:30pm</b>
4/14	26 / Discussion 14	Ch. 57 Conservation	Disc-P3 Poster Presentation
4/19	27	Ch. 57 Conservation	
4/25	--	--	P3 Final Proposal & Poster
4/28	--	<b>Final Exam (7:30-10:30pm)</b>	<b>Final Exam</b>

## Discussion Schedule

Date	Lecture / Discussion	Topic	Assignment Due
1/7	1 / Discussion 1	<ul style="list-style-type: none"> <li>Welcome &amp; Introduction</li> <li>Reading Primary Literature</li> <li>Avoiding Plagiarism</li> </ul>	
1/14	3 / Discussion 2	<ul style="list-style-type: none"> <li>Phylogeny Puzzle Parts I &amp; II</li> <li>Journal Article I Discussion</li> <li>Project 1 Biological Context</li> </ul>	Journal Article 1
1/21	5 / Discussion 3	<ul style="list-style-type: none"> <li><b>P1 Factbook Presentations</b></li> <li>Phylogeny Activity Part IV</li> <li>P1 Hypotheses &amp; Predictions</li> </ul>	<b>P1 Factbook Presentations</b>
1/28	7 / Discussion 4	<ul style="list-style-type: none"> <li>P1 Excel &amp; Summarizing Data</li> </ul>	P1 TBD
2/4	9 / Discussion 5	<ul style="list-style-type: none"> <li>P1 Statistics</li> </ul>	Exam 1 @ 5:30pm
2/11	11 / Discussion 6	<ul style="list-style-type: none"> <li>P1 Oral presentation Workshop</li> </ul>	P1 Draft Presentation
2/18	13 / Discussion 7	<ul style="list-style-type: none"> <li><b>P1 Oral Presentations</b></li> </ul>	<b>P1 Oral Presentations</b>
2/25	15 / Discussion 8	<ul style="list-style-type: none"> <li>Journal Article 2 Discussion</li> <li>P2 Intro, Literature Review</li> </ul>	Journal Article 2
3/3	17 / Discussion 9	<ul style="list-style-type: none"> <li>Field Trip</li> <li>P2 Peer Review Instructions</li> </ul>	Exam 2 @ 5:30pm
3/6	--	--	P2 Draft Paper
3/14	--	--	P2 Peer Reviews
3/17	19 / Discussion 10	<ul style="list-style-type: none"> <li>Project 3 Intro &amp; Research</li> </ul>	P2 Final Paper
3/24	21 / Discussion 11	<ul style="list-style-type: none"> <li><b>P3 Hypothesis Presentations</b></li> </ul>	<b>P3 Hypothesis Presentation</b>
3/31	23 / Discussion 12	<ul style="list-style-type: none"> <li>Field Trip (or P3 Poster Workshop)</li> </ul>	P3 Revised Hypothesis & Draft Outline
4/7	25 / Discussion 13	<ul style="list-style-type: none"> <li>P3 Peer Review (or Field Trip)</li> </ul>	P3 Draft Proposal
4/14	27 / Discussion 14	<ul style="list-style-type: none"> <li><b>P3 Poster Presentations</b></li> </ul>	<b>P3 Poster Presentation</b>
4/25	--	--	P3 Final Proposal & Final Poster
4/28	--	Final Exam (7:30-10:30pm)	Final Exam