

# Biology 101-07

## Concepts & Applications in Biology I

### College of Charleston, Fall 2016

---

Lecture: Section 7, Tues/Thurs 7:00PM-8:15PM – HWWE 213

Instructor: Walter Blair

Office: HWWE 309 or 311 by default (or 65 Coming St. Rm 102 if requested)

Office Hours: Mon-Fri 1:00-2:00pm (or by appointment)

Email: [wmblair@cofc.edu](mailto:wmblair@cofc.edu) (not @g.cofc.edu)

### Course Overview

#### Course Description

This is a non-science majors' course, which will provide a background for understanding and evaluating contemporary topics in biology and societal/environmental issues. The course emphasizes cellular and molecular concepts, including biochemistry, cell structure and function, respiration, photosynthesis, genetics and molecular biology. An understanding of methods, history, and the dynamic nature of science will also be emphasized.

#### Shared Goals

Instructor	Students
Review key material.	Familiarize yourself with material and then come to lecture engaged.
Equip you for lab experiences.	Prepare for labs and be collaborative.
Teach you how to think like a scientist.	Be open to new ways of thinking.
Create a space for reflection and personal expression.	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 for this course are:

- To learn what science is, how it works, and how you can apply it in your own life
- Become comfortable with and conversant in what living cells are and what they do to stay alive and reproduce
- Develop your toolbox of academic skills including:

- thinking critically, analytically, and skeptically about claims and arguments
- communicating via writing, conversing, and oral presentation
- formulating questions and generating hypotheses
- finding, reading, and making sense of primary literature
- synthesizing, summarizing and appropriate citation of primary literature
- working independently and in collaborations with other students

## Lecture

BIOL 101/101L will offer a foundation in both the biological sciences and the scientific process itself. 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 lecture slides 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 before each class for you to print and bring with you, 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.

## Lab

Biology 101L is a unique laboratory experience! It can be interesting, energizing, confusing, and frustrating at various times, because students often aren't accustomed to this style of problem-based learning. One of my goals is to prepare you for each week's lab exercises by covering relevant concepts and helping you practice the problem-based learning approach. Your final project in the lab will be an original research project that you and your team work on for quite a few weeks and present at the end of the semester

Biol 101 lecture and lab is a single 4-hr course. This means that the lab grades will count for 25% of the determination of the grade for the whole course. The lab grade spreadsheet is consistent across lab sections, and your TA will send me your midterm and final lab grades to incorporate into the overall grade.

## Required Materials

The text we are using for this lecture is the first half of *Biology: Concepts and Applications* by Cecie Starr *et al.* (Ninth Edition). The lab notebook is required and can

be purchased at SAS-E-INK on Calhoun St. All other required lecture materials will be made available on OAKS or hyperlinked in presentations.

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).

## **Office Hours & Appointments**

One of the major benefits of going to College of Charleston is that class sizes are relatively small, so you can get to know your classmates and professors. *Please let me know when you need help.* The fastest way to get in touch is by [email](#), and the best way to get help with course content is by meeting in person during office hours or scheduled appointment. You're attending a school where your professors value teaching and care about student success, so don't worry that you're bothering us!

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. Let's review class material as we go and try to clear up confusion early on.

## **Exams**

You will take three regular exams and a cumulative final for this course. All exam questions are short answer, and I will do my best throughout the semester to help you prepare for these difficult exams.

These may be some helpful ways to prepare for each exam:

- Talk through what you know with a layperson and/or write out what you know without looking at your notes. It's not enough to recognize the right answer as in a multiple choice test; you must explain concepts in your own words, and practice makes perfect.
- Work through old exams posted to OAKS and check in with me as you go.
- Come with questions to our optional out-of-class review sessions.
- Help your classmates create and revise your crowd-sourced study guide.

## **Assignments & Bonuses**

There will be two types of graded take-home assignments this semester. The "Exercises" consist of six assignments that will help build a number of skills but will predominantly be focused on 1) developing good scientific hypotheses, 2) conducting

solid background research, and 3) avoiding plagiarism. The “Favorites” consist of four assignments that allow you to do a bit of outside research on topics that interest you as we go through the course. Your work on forming hypotheses and conducting good background research will culminate in a mini-presentation in the last week of class. You will receive more specific guidance for all of these grade items as we go forward.

It is important to note that you will find assignment instructions on OAKS and upload your submissions to the appropriate OAKS folder. My feedback for each of you will in turn be uploaded to this same folder alongside your original submission. It is therefore important to be comfortable using OAKS as well as sending and receiving Microsoft Office, OpenOffice, or equivalent files (eg .doc, .ppt)

Bonus opportunities will be offered regularly during class throughout the semester. Bonuses will be explained only in class, and I will only accept submissions for bonuses that were explained on days for which you have a passing participation grade or excused absence. Don't ask me to repeat bonus assignments instructions! These are great opportunities for you to make connections in class and share your notes. The value for each bonus opportunity will be equal to one day's participation grade and will be added to your overall participation grade. There is no cap for your overall participation grade.

## Grading

Your current overall “final” grade will always be visible in OAKS. I can't discuss specific grades by email, so please find some time to meet with me in person if you want to discuss your grades.

Grade Item	% of Final
Participation	10
Exam 1	10
Exam 2	10
Exam 3	10
Final Exam	10
Mini-Presentation	10
Exercises (6 total)	10
“Favorites” (4 total)	5
Lab	25

Score	Grade	Score	Grade
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 Lab are mandatory. You will fail the course if you miss more than one unexcused lab, and you will fail the course if you miss more than three unexcused lectures. Showing up may be half the battle, but active engagement in individual and group activities will be required for your lecture 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.

To document an excused absence, you need to provide documentation to the Absence Memo Office, and they will send an email to all of your professors regarding your absence.

### **Use of Electronic Devices**

You can use your devices however you wish during lecture with two exceptions:

1. No use of electronics during group discussions.
2. I will collect your device whenever it is distracting to me or to classmates, so if you want or need to tune out please find subtle ways to do it.

### **Makeups & Late Assignments**

A valid, documented excuse (see above) must be received in order to schedule a make-up exam. Assignments that are due in class are due as soon as class starts and are considered late after that time. Missed tests 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 unexcused day to a minimum of 50%.

### **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.

### **General Education Requirements**

Please see the "General Education Requirements" document on OAKS for information on the College's expectations and evaluations of general education courses such as Biol 101 and 102.

## 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

Date	Lecture / Lab	Topic	Assignment Due
8/23	1 / No Lab	Course Intro	
8/25	2 / No Lab	Ch.1 – Invitation to Biology	Exercise #1
8/30	3 / Termite Trails	Ch.1 – Invitation to Biology	Favorite #1
9/1	4 / Termite Trails	Ch.2 – Life's Chemical Basis	
9/6	5 / What's Alive?	Ch.2 – Life's Chemical Basis	Exercise #2
9/8	6 / What's Alive?	Ch.3 – Molecules of Life	
9/13	7 / Osmosis & Diffusion	Ch.3 – Molecules of Life	Favorite #2
9/15	8 / Osmosis & Diffusion	<b>Exam 1</b>	<b>Exam 1</b>
9/20	9 / Plant Metabolism	Ch.4 – Cell Structure	Exercise #3
9/22	10 / Plant Metabolism	Ch.4 – Cell Structure	

9/27	11 / Metabolic Diversity	Ch.5 – Intro to Metabolism	Favorite #3
9/29	12 / Metabolic Diversity	Ch.5 – Intro to Metabolism	
10/4	13 / Projects - Proposal	Ch.6-7 – Photosynthesis	Exercise #4
10/6	14 / Projects - Proposal	Ch.7 – Cellular Respiration	
10/11	15 / Projects - Data	<b>Exam 2</b>	<b>Exam 2</b>
10/13	16 / Projects - Data	Ch.8 – DNA Structure & Function	
10/18	17 / Projects - Finish Data & Draft Article	Ch.8 – DNA Structure & Function	Favorite #4
10/20	18 / Projects - Finish Data & Draft Article	Ch.9 – From DNA to Protein	
	--		
10/25	19 / Projects – Lost in Timbuktu	Ch.9 – From DNA to Protein	Exercise #5
10/27	20 / Projects – Lost in Timbuktu	Ch.10 – Control of Gene Expression	
11/1	21 / Projects – Peer Review	Ch.10 – Control of Gene Expression	Exercise #6
11/3	22 / Projects – Peer Review	<b>Exam 3</b>	<b>Exam 3</b>
11/8	-- / No Lab	<b>Fall Break</b>	<b>Fall Break</b>
11/10	23 / No Lab	Ch.11-12 – How Cells Reproduce	
11/15	24 / Sickle Cell	Ch.13 – Patterns of Inheritance	Presentation Draft 1
11/17	25 / Sickle Cell	Ch.14 – Human Inheritance	
11/22	26 / No Lab	Ch.15 – Biotechnology	Presentation Draft 2
11/24	-- / No Lab	<b>Thanksgiving Break</b>	<b>Thanksgiving Break</b>
11/29	27 / Student Symposium	Final Presentations	Final Presentations Due
12/1	28 / Student Symposium	Final Presentations	
12/8		<b>Final Exam (7:30-10:30pm)</b>	<b>Final Exam</b>