

Biology 101-04

Concepts & Applications in Biology I

College of Charleston, Spring 2016

Lecture: Section 4, Mon/Wed/Fri 11:30AM-12:20PM – HWWE 213

Instructor: Walter Blair

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

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

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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.

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 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.

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 2nd 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).

Exams

You will take four exams for this course – three regular exams and a cumulative final. 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.

Assignments

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 five 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 on the last two days of class. The mini-presentation may pertain to a topic you chose for one of your "Exercises" or "Favorite" assignments, or you may choose to submit a new topic of interest. 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)

Grading

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" (5 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. Lectures will 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 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
1/8	1 / No Lab	Course Intro	
1/11	2 / Termite Trails	Ch.1 – Invitation to Biology	Exercise #1
1/13	3 / Termite Trails	Ch.1 – Invitation to Biology	
1/15	4 / Termite Trails	Ch.1 – Invitation to Biology	Favorite Element
1/18	5 / No Lab	Ch.2 – Life's Chemical Basis	
1/20	6 / No Lab	Ch.2 – Life's Chemical Basis	Exercise #2
1/22	7 / No Lab	Ch.3 – Molecules of Life	
1/25	8 / What's Alive?	Ch.3 – Molecules of Life	Favorite Microbe
1/27	9 / What's Alive?	Ch.4 – Cell Structure	
1/29	10 / What's Alive?	Ch.4 – Cell Structure	
2/1	11 / Osmosis & Diffusion	Ch.4 – Cell Structure	Exercise #3
2/3	12 / Osmosis & Diffusion	Synthesis	
2/5	13 / Osmosis & Diffusion	Exam 1	Exam 1
2/8	14 / Plant Metabolism	Ch.5 – Intro to Metabolism	Favorite Controversy
2/10	15 / Plant Metabolism	Ch.5 – Intro to Metabolism	
2/12	16 / Plant Metabolism	Ch.5 – Intro to Metabolism	
2/15	17 / Projects - Intro	Ch.6 – Photosynthesis	Exercise #4
2/17	18 / Projects - Intro	Ch.6 – Photosynthesis	
2/19	19 / Projects - Intro	Ch.6 – Photosynthesis	
2/22	20 / Projects - Proposal	Ch.7 – Cellular Respiration	Exercise #5
2/24	21 / Projects - Proposal	Ch.7 – Cellular Respiration	
2/26	22 / Projects - Proposal	Ch.7 – Cellular Respiration	
2/29	23 / Projects - Data	Synthesis	Favorite Inherited Trait
3/2	24 / Projects - Data	Exam 2	Exam 2
3/4	25 / Projects - Data	Ch.8 – DNA Structure & Function	
3/6	--		
3/14	26 / Projects – Finish Data & Draft Article	Ch.8 – DNA Structure & Function	Exercise #6
3/16	27 / Projects – Finish Data & Draft Article	Ch.9 – From DNA to Protein	
3/18	28 / Projects – Finish	Ch.9-10 – From DNA to Protein &	Favorite

	Data & Draft Article	Control of Gene Expression	Biotechnology
3/21	29 / Lost in Timbuktu	Ch.10 – Control of Gene Expression	
3/23	30 / Lost in Timbuktu	Ch.11 – How Cells Reproduce	Presentation Draft 1
3/25	31 / Lost in Timbuktu	Ch.11 – How Cells Reproduce	
3/28	32 / Projects – Peer Review	Ch.11 – How Cells Reproduce	
3/30	33 / Projects – Peer Review	Ch.12 – Meiosis & Sexual Reproduction	
4/1	34 / Projects – Peer Review	Ch.12-13 – Meiosis & Inheritance	
4/4	35 / Sickle Cell	Ch.13 – Patterns in Inherited Traits	
4/6	36 / Sickle Cell	Ch.14 – Human Inheritance	Presentation Draft 2
4/8	37 / Sickle Cell	Ch.14-15 – Human Inheritance & Biotechnology	
4/11	38 / Student Symposium	Ch.15 - Biotechnology	
4/13	39 / Student Symposium	Synthesis	
4/15	40 / Student Symposium	Exam 3	Exam 3
4/18	41 / No Lab	Mini-Presentations	Mini-Presentations Due
4/20	42 / No Lab	Mini-Presentations	
4/21	43 / No Lab	Mini-Presentations	
4/25		Final Exam (8-11am)	Final Exam