

WELCOME TO BIOLOGY 215!

Course Number: BIOL 215 CRN 80164
+ 96744+ 96814 + 97017+ 84544

Course Title: Organismal Biology
Science, Technology, Engineering, Math Division
5 units

MWF, asynchronous online

Lecture must be accompanied by a lab session.

Course Prerequisites: MATH 120 or MATH 123 with a grade of C or better. Recommended: Eligibility for ENGL 846 or ESOL 400.

Course Classification: Transfer credit: UC; CSU (B2, B3). Transfer credit: UC; CSU (B2, B3).

Course Description: As part of a two-course core program, BIOL 215 is an introductory survey of anatomy, physiology, evolution, and ecology of living organisms.

Course format: The lectures will be asynchronous in Canvas. Assignments will be posted weekly and must be completed during that week. **Labs will be in person in 7241.**

Make a schedule for yourself and stick to it. Watch the video and take notes. Read the text & take notes. Copy your notes, which will help you find gaps in your knowledge.

When will you watch the lecture video? _____

When will you read the text and study? _____

When will you do lab? _____

Instructor: Please contact the instructor at any time with questions concerning the course, an assignment, an upcoming quiz, etc.

Christine Case
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30 hr. Window for Emails: Sunday through Thursday, I will respond to emails within 24-30 hr (usually much faster but understand that the window is up to 30 hours)—hence the importance of NOT procrastinating. You know what is due well in advance; it's your responsibility to stay on schedule and prioritize your time. Don't wait

until the last minute to message me about something that's due in a few hours or the next day because I may not get back to you in time.

Philosophy: Lewis Thomas said *It is generally accepted that the biologic sciences are absolutely splendid. I don't know of any other human occupation, even include what I have seen of art, in which the people engaged in it are so caught up.* You, too, will become caught up in this splendid study—an affair that will last a lifetime.

BIOL 215 is part of the two-course core program for Biology majors. You should be taking **CHEM 210/218** or higher **concurrently**. When you have completed the Biology core program and organic chemistry you will be able to undertake upper division coursework in the biological sciences.

Course content, assignments, and lab work are comparable to that of your transfer institution and designed to prepare you for upper division work in the sciences. The basic principles you will study in Organismal Biology will be applicable in all biology-related professions including medicine, agriculture, biotechnology, animal behavior, and ecology.

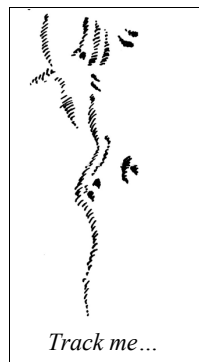
Organismal Biology will introduce you to the diversity of living organisms and how they have evolved to meet the challenges of life. All living organisms are faced with the same set of problems including how to get nutrients and transform those nutrients into usable energy and how to reproduce.

Student Learning Outcomes: After completing this course, you will be able to:

1. Demonstrate understanding of how the major groups of living organisms are related to each other and of their adaptations for survival.
2. Write clear and well-argued descriptions of topics in biological sciences, based on the course material and textbook articles.
3. Design, perform, and analyze experiments in biology.

Attendance/participation: Regular participation is expected. A student may be dropped for missing six lecture assignments or two labs.

Assignments are due on the assigned dates. Late work will not be accepted. All tests and quizzes must



be taken on the designated days, make-ups will not be given.

The Grade of W: You may wish to withdraw from this class. If you withdraw prior to 9-6-21 nothing will appear on your record. If you withdraw between 9-6-21 and 11-16-21, a *W* will appear on your transcript. You will receive a *W* for missing six assignments *prior* to 11-16-21. Anyone missing six assignments *after* 11-16-21 will get a final grade of F.

Requirements: Lectures, lab activities, small-group activities, and quizzes constitute the main activities of the class.

All homework, exams, and one final examination must be taken for a passing grade. All laboratory work must be completed, and lab reports must be submitted on time to earn full credit. All laboratory reports must be completed to earn a passing grade.

Grading

Lecture: 60%. Includes 40 points for HBA work.
Laboratory 40%.

A	≥ 88% of points
B	75-87%
C	60-74%
D	45-59%
F	≤ 45%

Excellent attendance and class participation will be taken into consideration during grading.

Class conduct policy: You are also responsible for adhering to the Code of Student Conduct outlined in the College Catalog.

Academic honesty. Plagiarized lab reports and papers will receive a score of zero. The work you submit must be your own. The Skyline College Catalog has a complete statement defining cheating and plagiarism.

Disability. The Educational Access Center provides accommodations, counseling, and support services to students with documented disabilities. For assistance, please contact the EAC in room 5132 or call 650-738-4280.

Textbook

Urry, L. *et al.* (2021). *Campbell Biology*, 13th ed. San Francisco: Pearson, 2021.

Study Aids, at <skylinecollege.edu/case>



DATES TO REMEMBER

Assignments online	Date due
Biosurfing*	Sept. 3, 2021
Start your project*	Sept. 8, 2021
Journal article* related to your project background	Oct. 4, 2021
Plankton data*	Oct. 29, 2021
Term Project due (Late papers will <i>not</i> be accepted.).....	Nov. 24, 2021

* Instructions and further information on Canvas and at accounts.smccd.edu/case/biol215.html



LECTURE SCHEDULE

Skim the assigned pages before lecture and then study them for comprehension after lecture.

Date	Topic*	Reading†
8/18	Lecture 1: Introduction	Ch. 1
8/20	Natural selection	Ch. 22 & 24
8/23–8/27	Biodiversity	§26.1–§26.4
8/30	Nutrient procurement—carbon & energy	Ch. 37, §36.5, §36.6
9/3	About your term project‡	<on Canvas>
9/8–9/13	Nutrient procurement	Ch. 41 & §31.1
9/15	Osmosis and diffusion	§7.3
9/17	TEST. Available from 12:01 AM to 11:59 PM. The test is timed so plan to work on it for 60 min.	
9/20	Scientific journals‡	<on Canvas>
9/20	Gas exchange—plants	§10.1, §36.4, §36.5
9/22–9/24	Gas exchange—animals	§42.5–42.7
9/27	Internal transport—plants	Ch. 36
9/29	Internal transport—animals	§42.1–42.4
10/1 –10/6	Immunity	Ch. 43
10/8	Homeostasis	§44.1–44.5
10/11–10/15	Support systems	§50.6
10/18–10/20	Regulation of body fluids	Ch. 44
10/22	TEST. Available from 12:01 AM to 11:59 PM. The test is timed so plan to work on it for 60 min.	
10/25	Hormonal control—plants	Ch. 39
10/27	Hormonal control—animals	Ch. 45
10/29	Growth	Ch. 12
11/1	Meiosis	Ch. 13
11/3–11/5	Reproduction	Ch. 46
11/8	Development	Ch. 47
11/10–11/19	Chromosomal basis of inheritance	Ch. 14 & 15
11/22–11/24	Population genetics	Ch. 23
11/29	Ecology: Food webs	§54.2, Ch. 55 §56.4
12/1–12/3	Ecology: Biomes	Ch 54, Fig 56.29, 56.30
12/6	Ecology: Populations	Ch. 53
12/8–12/10	Ecology: Succession	§54.3, Fig 56.23
12/13	Final Examination. Available from 12:01 AM to 11:59 PM. The test is timed, 2.5 hr.	



* Lecture videos are on Canvas

† Urry, L. *et al.* (2021). *Biology*, 12th ed. San Francisco: Pearson. § refers to section, e.g., §36.5 is section 5 in Chapter 36.

‡ Instructions and further information on Canvas.

BIOL 215 LABORATORY

Course Number BIOL 215 CRN 80164 + 96744 + 96814 + 97017+ 84544

Course Title Organismal Biology

Science, Technology, Engineering, Math Division
5 units

Lecture must be accompanied by a lab session. Labs are in 7241.

Section	CRN	Days	Time
BC	96744	MW	2:10–4:50 PM
BX	97017	MW	5:10–7:50 PM
HA	80164	MW	2:10–4:50 PM
HB	84544	TT	9:10–11:50 AM
HC	96814	MW	5:10–7:50 PM

Course Prerequisite MATH 120 or MATH 123 with a grade of C or better. Recommended: Eligibility for ENGL 846 or ESOL 400.

Course Classification Transfer credit: UC; CSU (B2, B3).

Course Description As part of a two-course core program, BIOL 215 is an introductory survey of anatomy, physiology, and evolution of living organisms.

Lab Manual The manual is on Canvas.

Case, C, and S. Bookstaff. (2021). *Investigations in Biology*, 26th ed. San Bruno CA: Skyline College.

Instructors Please contact the instructor at any time with questions concerning the course, an assignment, etc.

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MW 5:10–7:50 PM
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Philosophy Marie Curie said *A scientist in his laboratory is not a mere technician: he is also a child confronting natural phenomena that impress him as though they were fairy tales.*

This lab is meant to be a stimulating introduction to biology and the conduct of science. The tone of this lab and what you get out of it, however, are totally up to you. We guarantee that your attitude towards our weekly lab sessions will greatly affect your grade and the enjoyment you derive from this class. So come to labs with a **positive attitude**, a **willingness to learn**, and a **strong work ethic**. **Preparation** beforehand and **attention** to details in the lab will surely pay off in the long run.

This semester in lab we will focus on the structure and function of organisms, their evolution, and how they interact with one another and the environment. Specifically, we will explore some of the problems that all living things must solve in order to survive and some of the key evolutionary developments that provided novel solutions to these problems.

Each lab will consist of a short introductory background, followed by one or several laboratory activities. **Ask questions!**

Attendance Complete your labs on time. You'd be surprised how fast 10-point assignments can add up (for good or for bad)!

Be sure to have your lab report stamped during lab.

Requirements All laboratory work must be completed to earn full credit on a laboratory report. All laboratory reports must be completed to earn a passing grade; laboratory will account for approximately 40% of the grade. Excellent attendance and class participation will be taken into consideration during grading. Late reports will lose 5% of the points per day.

35 lab reports × 10 points each = 350 points

Lab Techniques Keep a record of those techniques you have mastered so you can add them to your resume. The list of lab techniques used in this course is on the BIOL 215 web site.

How to earn a good grade in this laboratory:

1. *Follow the advice above.*
2. *Make the most of lab time.* Plan your work and follow through with the lab until it's completed. Don't rush, repeat experiments that didn't go well or to verify your results, and don't try to google for your results. (That doesn't work.)
3. *Turn in your assignments on time.* 5% deducted for each day late!
4. *Do all the assignments.* It is far easier to redeem a low grade than a grade of zero.
5. *Do your own work!* Cheating or plagiarism results in a grade of zero! This applies especially to lab reports.
6. *Clean up after yourself! Always!*



BIOL 215 LABORATORY SCHEDULE

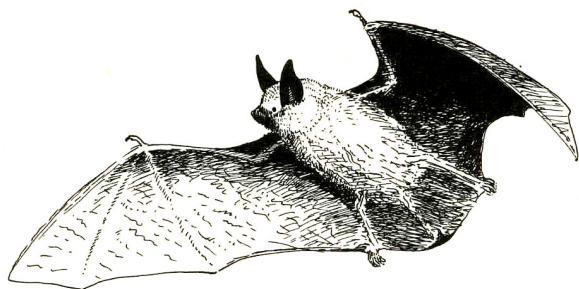
Keep this schedule. **Read** the assigned lab experiment(s) prior to coming to class. Lab reports are **due** at the next lab following completion of the experiments. *Campbell Biology* is an excellent reference for lab work. Check the Lab Help pages at skylinecollege.edu/case.



We have two labs each week. Are you in a **MW section** or **TT section**?

AUGUST 2021					
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	notes
		18 Safety. Observations <i>due today</i>	19 Safety. Observations <i>due today</i>	20	
23 Mammals & evolution	24 Mammals & evolution	25 Microscopy	26 Microscopy	27	
30 Function & Behavior	31 Function & Behavior				

SEPTEMBER 2021					
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	notes
		1 Data pre-lab Scientific method	2 Data pre-lab Scientific method	3	
6	7 Nutrient pro- curement Start project	8 Nutrient pro- curement Start project	9 Fetal pig Industrial mi- crobiology	10	
13 Fetal pig Industrial mi- crobiology	14 Diffusion & Osmosis	15 Diffusion & Osmosis	16 Digestive enzymes dis- section	17	Collect project data
20 Digestive enzymes dis- section	21 Digestive enzymes	22 Digestive enzymes	23 Photosynthe- sis	24	
27 Photosynthe- sis	28 Gas exchange	29 Gas exchange	30 Cloning		Asepsis pre- test



OCTOBER 2021					
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	notes
				1	
4 Cloning	5 Transport-animals & Support	6 Cations/ lichens	7 Cations/ lichens	8	Collect project data
11 Transport-animals & Support	12 Biological transport-plants	13	14 Regulation of H ₂ O	15	
18 Biological transport-plants	19 Glycogen metabolism	20 Regulation of H ₂ O	21 Plant life cycle <i>due today</i>	22	
25 Glycogen metabolism	26 Farming Day	27 Plant life cycle <i>due today</i>	28 Urogenital System	29	

NOVEMBER 2021					
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	notes
1 Farming Day	2 Biological insecticides	3 Urogenital System	4 Growth	5	
8 Biological insecticides	9 Meiosis	10 Growth	11 Project	12	Take care of your plants
15 Meiosis	16 Blood groups Mendelian Inheritance	17 Fertilization	18 Fertilization	19	
22 Blood groups Mendelian Inheritance	23 Development <i>due today</i>	24 Project	25	26	Cloning day 2
29 Development <i>due today</i>	30 Serum proteins				

DECEMBER 2021					
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	notes
		1 Serum proteins	2 Population growth <i>due today</i>	3	
6 Population growth <i>due today</i>	7 Mechanisms of evolution	8 Mechanisms of evolution	9	10	
13 FINAL EXAM					