

**GENERAL BIOLOGY II: Ecology, Evolution & Systematics
BIOLOGY 152
Spring 2022**

INSTRUCTORS:

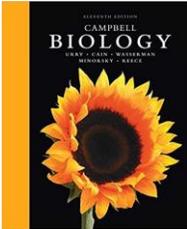
Dr. Andrew Samuelsen, x7723, SH 137
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Dr. Ian Cost, x7728, SH 239
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TEXT:

Required

Urry LA, Cain ML, Wasserman SA, Minorsky PV, Reece JB. 2017. Campbell biology, 11th ed. San Francisco, Pearson.



Optional

Hoffman AH. 2019. Writing in the biological sciences: A comprehensive resource for scientific communication, 3rd ed. New York, Oxford University Press.



COURSE DESCRIPTION:

This course is designed to introduce students to the immense biodiversity among living organisms. We begin with an introduction to the process of evolution which produces biodiversity. This is followed by a survey of members of 4 kingdoms highlighting their unique characteristics, their patterns of growth and reproduction, and how they live and interact with the world around them. The course concludes with animals and a description of the ecological forces that drive their diversification.

DEPARTMENTAL LEARNING GOALS:

In this natural science foundations course, the successful student will:

- Gain knowledge in the fields of systematics, evolution, and ecology.
- Learn how to use basic laboratory equipment and techniques, including microscopy, sampling, identification, and aseptic technique.
- Develop problem-solving skills through scientific inquiry, and gain experience using the scientific process, including formal observation, developing testable hypotheses and predictions, and designing experiments.
- Practice communicating hypotheses, results, and data interpretation orally and in writing using scientific vocabulary, graphical data presentation techniques, and statistical analysis.
- Learn how to attribute sources using standard biological formats.

4th HOUR OF RIGOR:

The laboratory for this class constitutes the majority of the fourth hour, but there will be several writing and other homework assignments associated with the lab.

CLASS ATTENDANCE:

All students are expected to attend 3 lectures each week (MWF 11:00 – 11:50) and one three-hour laboratory section. Regular class attendance is strongly recommended, for although the text will serve as a useful reference to material presented in lecture, the scope of the lectures will **not** be limited to the text. Reading assignments are **not** meant to substitute for material covered in lecture; some material presented in lecture will not be mentioned in the reading assignments. The course Canvas site will also provide study tips and opportunities to explore text and class materials.

Laboratory attendance is mandatory. Please consult your laboratory syllabus for additional information.

Prompt attendance on test days is essential. Exams or in-class exercises missed without a valid, documented excuse will result in a score of zero being included in your course grade. Few exceptions will be given for missed lecture exams. If you know you must miss an exam, you must contact the instructor **BEFORE** the exam is given to discuss the possibility of a make-up exam. Laboratory assignments are due at the beginning of lab on the dates recorded in the syllabus.

Late papers will NOT be accepted.

Important: If you are ill, you must have a written medical excuse. If you fail to contact the instructor before the exam, you may not be given the opportunity to make-up the exam. In the event that illness or family emergency prevents you from completing your assignments, attending class, or writing an exam in this or any course, proper

procedure requires notification of the **Dean of Students** or the **Registrar**. These offices will formally notify all your professors of your absence, saving you the extra stress of having to find each instructor.

GRADING:

The lecture portion of your grade will be determined from 4 hourly exams worth 100 points each, one comprehensive final worth 100 points, and about five quizzes worth a total of 50 points. For your overall course grade, 60% will be based on points earned in lecture, and the other 40% will be based on points earned in lab. You will receive a lab syllabus explaining the scoring for that portion of the course.

ACADEMIC INTEGRITY:

Scholarly activity rests on the foundations of academic integrity. This means that such activity is conducted in an honest and fair manner and free from deception. Activities such as cheating on an exam, plagiarism, fabrication of information or citations, submitting work by another person as your own, submitting work from a previous course, and/or facilitating another student in any of these endeavors. A student charged with academic dishonesty will be given written or oral notice of the charge, will receive an F on the assignment in question, and the matter will be referred to the Dean of Academic Affairs. At our discretion, the student may receive an F for the course.

If a student wishes to contest the charges, they should seek redress through informal discussions with the instructor, department head, dean, or ombudsman. If the student is to receive an F for the course or the case is referred to the Dean of Academic Affairs, all parties will be afforded formal due process procedures.

Biology majors are required to maintain at least a C average in Bio 151 and 152 to be able to enroll in upper level courses.

STUDENTS WITH LEARNING DISABILITIES:

Students have academic support resources available to them at no charge. The Academic Learning Center offers course-specific tutoring, academic skills workshops, hands on learning strategies instruction, and academic counseling to supplement faculty advisement. The Writing Center offers tutoring to assist with writing and reading support for any class. The Student Accessibility and Advocacy office is the source for impairment-related accommodations consistent with the ADA and its amendments. Students who receive accommodations from the SAA office should meet with course instructors privately and in a timely manner to discuss the Academic Accommodation Letter (AAL) provided by that office. *Please note that IEPs and 504 plans do not apply to college level courses* All three offices are in the administration building. For help or further information, contact the ALC at academiclearningcenter@albright.edu or 610-921-7662; the WC at writingcenter@albright.edu or 610-921-7540; and the Student Accessibility and Advocacy office at SAA@albright.edu or 610-929-6639.

We encourage you to visit the Writing Center early and often throughout the semester to help build a strong foundation for writing in this course and in all of your courses. The center's peer tutors and director will work with you at any stage of the writing process, from developing and organizing ideas to revising and editing drafts. Rather than editing your work for you, writing tutors will actively engage you in meaningful conversations about your writing and help you learn new strategies. Tutors are also available to discuss and practice approaches to managing the college reading workload and reading more effectively. For students unable to visit in person, we now offer an online chat/video tutoring option. The center is located on the ground floor of the Library/Administration Building and can be reached at writingcenter@albright.edu or (610) 921-7540. Appointments are strongly recommended to ensure availability. You can view the current schedule and make an appointment through our online appointment system at <http://alb.mywconline.com> or visit our center in person for assistance.

Diversity, Equality, and Inclusion in this Course:

Class discussions will be conducted respectfully and professionally. We will use proper scientific terminology to discuss topics. Students and professors are expected to be respectful and to properly address classmates and professors by their chosen names, pronouns, and respective titles. We will be a learning community that appreciates the successes, struggles, and skill sets that we each bring to this class. This course will be a learning environment that is comfortable for students to explore biology. It is within that goal that this course will support and enrich student learning by using diverse learning styles in classroom discussions, honoring each student's perspectives and experience, and by being respectful of all members of our learning community.

COURSE OUTLINE:

Week	Date	Topic	Pages	Instructor
1	24-Jan	Introduction to Evolution	462-479	Cost
	26-Jan	Evolution	480-483, 493-498	Cost
	28-Jan	Phylogeny I	547-558	Cost
2	31-Jan	Phylogeny II	547-558	Cost
	2-Feb	Speciation I	501-510	Cost
	4-Feb	Speciation II	501-510	Cost
3	7-Feb	History of life on Earth	507-530	Cost
	9-Feb	Review/Catch-up		Cost
	11-Feb	Exam #1		
4	14-Feb	Kingdoms, Domains & Prokaryotes	566-568	Samuelsen
	16-Feb	Bacteria & Archaea	571-590	Samuelsen
	18-Feb	Origin of Eukaryotes	591-596	Samuelsen
5	21-Feb	Eukaryotic Cell Class Exercise, Protists	597-606	Samuelsen
	23-Feb	Algae	607-615	Samuelsen
	25-Feb	Fungi & Lichens	652-670	Samuelsen
6	28-Feb	Fungus Class Exercise		Samuelsen
	2-March	Bacteria through Fungi Quiz, Exam Review		Samuelsen
	4-March	Empowering Albright Voices on Campus		
7	7-March	Exam #2		Samuelsen
	9-March	Mosses and Liverworts	616-626	Samuelsen
	11-Mar	Ferns & Seedless Plants	627-633	Samuelsen
8	Spring Break Monday, March 14 – Friday, March 18			
9	21-Mar	Gymnosperms & Angiosperms	634-651	Samuelsen
	23-Mar	Flowers & Fruits	820-832	Samuelsen
	25-Mar	Vascular Plant Summary/Biotechnology	833-839	Samuelsen
10	28-Mar	Growth of Plants	756-781	Samuelsen
	30-Mar	Transport in Plants	782-802	Samuelsen
	1-April	Plant Hormones	840-853	Samuelsen
11	4-April	Plant Video (Sexual Reproduction in Plants)	video	
	6-April	Plant Quiz, Exam Review		Samuelsen
	8-April	Exam #3		
12	11-April	Introduction to Ecology	1144-1149	Cost
	13-April	Introduction to Ecology	1144-1149	Cost
	15-April	Global vs. Local Climate	1146-1149	Cost
13	18-April	Behavioral Ecology		Cost
	20-April	Population Ecology	1184-1205	Cost
	22-April	Animal Forms	673-676	Cost
14	25-April	Animal Diversity I	680-710	Cost
	27-April	Animal Diversity II	680-710	Cost
	29-April	Animal Diversity III	714-742	Cost
15	2-May	Animal Diversity Catch-up		Cost
	4-May	Animal Diversity Catch-up		Cost
	6-May	Exam #4		
16	9-May	Course Evaluation & Review for Final		

Final Exams: 10 May -13 May