

Biology 160, Principles of Animal Biology, Spring 2013

Course overview

Faculty	Peter Zani, Ph.D.
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Office hours	10:00-10:45 MTWRF, if the door is open, or by appointment

Course description

This course introduces you to the basic principles animals & explores the diversity of different life forms. We will explore the unity & diversity of animal life on Earth, its evolutionary change & diversification through time, as well as structure–function relationships within organisms. You will specifically learn about biological chemistry, the different types of living things, what science is (and is not), & the basics of evolution. This is a fast-paced course (don't fall behind).

Course goals

Instill an appreciation of the major characteristics of animals, the ways that animals make a living, as well as certain aspects of animal form and function.

Develop your ability to apply the scientific method to the study of life on Earth & your understanding of how biologists go about studying biological diversity.

Course readings

Readings will be primarily from the required textbook Integrated Principles of Zoology 15th ed. by Hickman et al. There may also be supplementary materials provided as needed. You are expected to read the assigned pages prior to lecture & then review those pages again after class.

Course evaluation:

Your grade in this course will be based on the following components totaling 1000 pts:

Participation	Homework	Lecture quizzes	Lab quizzes	Lab assignments	Exams (3)	Final exam
100	100	100	100	100	300 (100 ea.)	200

Attendance / Participation

Class attendance is expected (yes, you are required to come to class and lab). In addition, participation in class and lab are expected, including answering questions posed in class, asking questions, & participating in classroom and lab discussions. Roughly half of these points will be awarded for lecture and lab.

Homework

Homework assignments will focus on current topics & should help you practice solving problems, reinforce material, & prepare for exams. Assignments are due *AT THE BEGINNING OF CLASS* on the appointed day (unless otherwise noted on the course schedule). Late assignments will lose 10% each day including the day they are due. Thus, assignments turned in at the END of class are “late”. Something turned in late loses 10% the first 24h, 20% the second 24h, etc. There will be no make-up work unless the absence was excused and/or documented. There is no extra credit planned at this time.

Quizzes

There will be a 10-point quiz most weeks in class. The only exceptions are weeks during which we have an exam scheduled. If there are more than 10 quizzes your lowest grade(s) will be dropped. Lab quizzes will be at the beginning of each lab and will cover the material from the previous week.

Lab Assignments

There will be an in-lab assignment to complete each week. To receive full credit you must present your assignment prior to the end of lab for grading. These may include making drawings, figures, graphs, or completing a certain exercise.

Term Exams

There will be three term exams that will take place in TNR room 122 from 6-7 pm. Exams will not be comprehensive, though the material does build throughout this semester. Exam questions will be similar to quiz questions & will consist of multiple-choice, short-answer, and a few longer essay-type questions.

Final Exam

The final exam will be similar to other exams (see above), but will be *comprehensive* with roughly half the exam covering the first three quarters of the semester and one half covering the last quarter.

Final Grades

Your final grade is based on the percentage of points that you earn.

≥93% = A, ≥90% = A-, ≥87% = B+, ≥83% = B, ≥80% = B-, ≥77% = C+, ≥73% = C, ≥70% = C-, ≥67% = D+, ≥60% = D, <60% = F

In-Class Behavior

You are expected to be respectful & considerate of your fellow students' learning environment. In addition, you are expected to focus on the topics of the day in lectures. Thus, certain electronic devices are considered by me to be distractions & not allowed in the classroom. Primary among these are cell phones & computers. *All cell phones* are to be silenced & put away during class. No texting, no calls, no exceptions (I may not say anything at the time, but you should expect your participation grade to be affected negatively if you violate these guidelines). Unless you have a documented learning disability that requires a laptop to take notes, there are to be no computers during lectures. During lectures we may engage in periodic discussions of relevant issues. You are not required to *agree* with every opinion expressed by me or your peers; in fact, healthy skepticism is to be expected of any good scientist. However, you should respect the right of others to hold different opinions & perhaps even learn from their viewpoints. You are expected and encouraged to ask questions & participate in discussions where appropriate (remember part of your grade depends on class participation).

Academic Honesty

Plagiarism and cheating of any form are serious offenses and may result in an F for the assignment, the course, or expulsion from the university. The details of the UWSP Academic Integrity policy are found in the Student Handbook. It is your responsibility to read and understand the contents of that policy before you submit work to be graded. Questions regarding the policies and enforcement of the policies may be addressed to me during office hours.

Notification of Participation in College Sanctioned Events

Individuals who must miss a class to participate in a college-sanctioned event are expected to notify me in advance and complete the work, including tests, in advance. It is your responsibility to communicate with me in advance regarding absences and determine a schedule for make-up work.

Concerning Disabilities

UWSP abides by interpretations of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 that stipulates no student shall be denied the benefits of an education "solely by reason of a handicap." Disabilities covered by law include, but are not limited to, learning disabilities, hearing, sight, or mobility impairments, and other health related impairments. If you have a documented disability that may have some impact on your work in this class for which you may require accommodations, please see me during the first two weeks of the semester so that such accommodations may be arranged.

Studying Strategies

Each individual has their own set of learning techniques, but the following may help you create a strategy in this class. The following list is based on interactions with students to find out what works and what does not work. Many of the assignments in this class are designed with the following suggestions in mind. I suggest you look this list over BEFORE you score poorly on that first exam and are then left to try to recover over the remainder of the term.

- **Keep up with the material.** Read the assigned chapters prior to coming to class, but do not spend hours reading, taking notes and highlighting. At a minimum, skim the chapter and read the review material at the end of each chapter before coming to class. You might want to bring your textbooks to class, but this is not required. Often, figures in the text will be used in lecture. I will try to let you know which figures these are. DO NOT wait until the weekend before the exam to start studying for this class. *At very least* you should review your notes for each lecture for about 10 minutes within 24 hours of class. Doing so means you are studying the entire time and not trying to shove all the info into your brain at the last minute.
- **Review and rewrite your notes.** I think this is especially important to do within about 24 hours to turn short-term memory into long-term memory. However, do not simply rewrite your notes word for word as this will not be as useful for learning the material. Try to put things in your own words with additions that you might get from the readings as well. One possibility is to first write an outline from memory and then go back through your lecture notes to produce a more detailed outline.
- **Make additional drawings.** Graphical interpretation or representation can be incredibly useful for learning. Making copies by hand from things in the text that summarize the material covered in lecture can be helpful for learning interrelationships.
- **Review the text.** The material that I cover in lecture is obviously what I consider important, so focusing on those sections in the text is not entirely unwarranted. Probably the best method is to take notes as you read. Do not simply highlight or copy down sections verbatim. The only way to learn the information and concepts well is to *interpret* what you read using your own words.
- **Do practice quizzes.** There are review questions located at the end of each chapter. One strategy is to treat these like essay questions on an exam when you try to answer them. There are also online supplements for our text (listed at beginning of book on page xiv).
- **Form a study group.** Many of the terms and ideas in this class will be very foreign to you. With all the new terms it's almost like learning a new language. Trying to explain these ideas for the first time on an exam can be problematic. Rather I suggest that AFTER you have studied and think you know the material to get together with a group of other students in this class to review the material. Do so verbally. This will force you to explain things to others who should know if you are correct and hopefully clarify holes in your knowledge.
- **Come to my office hours.** I have listed my regular office hours on the syllabus and I can be contacted by e-mail. I will also be happy to meet with you outside of my hours if need be. Talk about the material with friends, classmates, study group partners, etc. It is better to find out that you don't understand *before* an exam instead of *after* an exam (when you can't change your grade).

Class Schedule (tentative)

Wk	Dy	Date	Class Topic	Chapter: Pages	Lab
1	W	Jan. 23	Intro to Animal Zoology		
1	F	Jan. 25	Scientific Method	1: 1-13	
2	M	Jan. 28	Natural Selection and Evolution	1: 13-4; 6: 100-111	Evolution & The Scientific Method
2	W	Jan. 30	Mechanisms of Change	6: 121-129	
2	F	Feb. 1	Chemical & Molecular Basis of Life	2	
3	M	Feb. 4	Cellular Reproduction: Mitosis	3:50-53	Cell Division
3	W	Feb. 6	Cellular Reproduction: Mitosis	3:50-53	
3	F	Feb. 8	Cellular Reproduction: Meiosis	5: 72-75	
4	M	Feb. 11	The Cell as Building-Block of Life	11	Microscopy and the Cell
4	W	Feb. 13	Cell Membranes	3: 44-49	
4	F	Feb. 15	Cellular Machinery	3: 35-44	
5	M	Feb. 18	Mendelian Genetics	5: 76-85	Genetics and Pedigree Analysis
5	W	Feb. 20	DNA Structure, Transcription & Translation	5: 85-91	
5	F	Feb. 22	DNA Replication & Gene Regulation	5: 91-96	
6	M	Feb. 25	Integrating Ideas So Far		Insect Diet and Growth Setup
6	W	Feb. 27	Thermodynamics; EXAM 1 (TNR 122, 6-7pm)	4: 55-60	
6	F	Mar. 1	Acquiring & Using Energy	4: 60-69	
7	M	Mar. 4	Diet & Nutrition	32: 710-15, 723-25	Data Collection; Worm Dissection
7	W	Mar. 6	Digestive Systems	32: 715-723	
7	F	Mar. 8	Basics of Physiology: Homeostasis	30	
8	M	Mar. 11	Support Systems	29: 647-657	Data Collection; Crayfish Dissection
8	W	Mar. 13	Movement	29: 657-666	
8	F	Mar. 15	Nervous Control of Movement	33: 728-737	
9	M	Mar. 18	Basics of Circulatory Systems	31: 687-695	Data Collection; Animal Circulation
9	W	Mar. 20	Vertebrate Circulation	31: 695-699	
9	F	Mar. 22	Respiratory Systems	31: 700-707	
SPRING BREAK—NO CLASSES					
10	M	Apr. 1	Integrating Ideas So Far		Invasive Species
10	W	Apr. 3	Taxonomy & Systematics	10: 198-202	
10	F	Apr. 5	Common Descent	6:111-114	
11	M	Apr. 8	Phylogeny and Relationships	10: 204-214	Classification and Phylogeny
11	W	Apr. 10	Endocrine Regulation; EXAM 2 (TNR 122, 6-7pm)	34: 755-758	
11	F	Apr. 12	Vertebrate Endocrine Systems	34: 759-769	
12	M	Apr. 15	Gametogenesis	7: 134-143	Rat I: Skeletal, Muscular, Sensory
12	W	Apr. 17	Patterns of Animal Reproduction	7:143-152	
12	F	Apr. 19	Development	8: 155-170	
13	M	Apr. 22	Developmental Patterns	8: 170-182	Rat II: Digestive, Respiratory, Circulatory, Urogenital
13	W	Apr. 24	Animal Body Plans	9: 184-190	
13	F	Apr. 26	Tissues	9: 191-195	
14	M	Apr. 29	Central Nervous System	33: 737-742	Competition and Predation
14	W	May 1	Receptors and Senses	33:742-752	
14	F	May 3	Lifestyle Choices: Endothermy vs. Ectothermy	30: 681-682	
15	M	May 6	Ecological Relationships Among Animals	38: 826-834	Field Trip to Schmeeckle
15	W	May 8	Animal Interactions; EXAM 3 (TNR 122, 6-7pm)	38: 834-841	
15	F	May 10	Integrating Ideas So Far		