

BIO 160: Introduction to Animal Biology, Section 2
UW – Stevens Point
Fall 2019

Course Description: Anatomy, physiology, adaptation, and classification of animals; morphology and anatomy of various types of animals. This course examines topics ranging from the cellular and molecular to population and community scale, investigates fundamental concepts of biology, and discusses social contexts of animal biology.

Course Meeting Days/Times Location: Lecture – Mon, W & F 11:00 – 11:50 PM (CBB 101)
 Lab 1 Mon 8 – 10:50AM (CBB 166), Lab 2 Wed 8 –10:50AM (CBB 166), Lab 3 Wed 2 – 4:50 PM (CBB 166)

FACULTY INFORMATION

Lecture & Lab Sec 1&2 Instructor:

Dr. Sarah Orlofske

Office Location: TNR 446

Office Hours: Mon, W 12:30 – 2:00 PM, and by appointment.

Phone Extension: 715-346-4249

E-mail: Sarah.Orlofske@uwsp.edu

Lab Sec 3 Instructor:

Dr. Ashley Driver

Office Location: CBB 307

Office Hours: Mon and Thurs 1:00 – 2:00 PM, and by appointment.

Phone Extension: 715-346-4256

E-mail: adriver@uwsp.edu

COURSE MATERIALS

List of Required Texts / Materials:

- Campbell Biology, eleventh edition (CB 11e) by Urry, Cain, Wasserman, Minorsky, and Reece. Available through UWSP bookstore rental at the Dreyfus University Center.
- Lab Manual: “Rat Manual” is available for purchase at the UWSP bookstore.
- A dedicated binder with loose-leaf or white paper to organize lab materials
- Dissection kit and safety goggles (Purchase at UWSP bookstore)
- Gloves for dissection labs (Gloves WILL NOT be provided for dissection labs.)

STUDENT LEARNING OUTCOMES

Upon completing this requirement, students will be able to:

GENERAL EDUCATION PROGRAM LEARNING OUTCOMES	COURSE LEARNING OUTCOMES:
NS LO1: Explain major concepts, methods, or theories in the natural sciences to investigate the physical world.	1. Integrate various levels of biological organization and their emergent properties. 2. Differentiate and classify animal body plans and organ systems. 3. Recognize cell theory, inheritance, evolution, and developmental biology as the foundations of zoological science.
NS LO2: Interpret information, solve problems, and make decisions by applying natural science concepts, methods, and quantitative techniques.	4. Explain how scientific inquiry is different than other intellectual endeavors.
NS LO3: Describe the relevance of aspects of the natural sciences to their lives and society.	5. Apply principles of zoological science to broader personal and societal issues.

Revised 12/6/2017

Revised 2014

STUDENT TASKS / ASSIGNMENTS / REQUIREMENTS

EXAMS: Exams will be given during lecture periods where you will have 50 minutes to complete each exam. Questions will be a mix of multiple choice, fill in the blank, short answer, and essay. Exams will be designed to test your mastery of the material as well as your ability to apply critical-thinking skills. Exams are closed-notes, closed-book. These exams will be given in class on selected dates shown in the schedule. **Attendance is mandatory for exams.**

TEXTBOOK READINGS: Textbook readings are required and exams, quizzes and in-class activities will be based on material covered in the assigned chapters. Students will be expected to read the material BEFORE coming to class. Lecture material will be associated with the concepts but is intended to present the material in a new way and provide context. Students should be advised that the lecture material will not be identical to the textbook, but is designed to complement and build upon it.

ONLINE QUIZZES: Throughout the semester, 10 online quizzes will be given in Canvas. These may require demonstrating knowledge gained from textbook readings or lecture content. Out of the 12 total quizzes, the 2 lowest scores will be dropped

LECTURE ACTIVITIES: Throughout the semester, I will provide a series of hands-on activities during lecture leading to a question that students will have to answer with a written response (1-2 short paragraphs), drawings, or use of mathematical formulas. These activities may require application of what was discussed in class to a different scenario or evaluation of scientific evidence behind a particular concept covered in class. The questions will be worth 10 pts and are due AT THE END OF CLASS unless otherwise stated. If you are absent the day an activity is assigned, you will not be allowed to make it up (except according to the excused absence policy below). To answer the in-class, activities, you can use your notes from lecture, the textbook, or other appropriate scientific source (correctly cited) to formulate your answers *in your own words*. Plagiarism of any sort (for example, copying directly from books, internet, or fellow classmates) will not be tolerated (see policy on academic integrity).

LABORATORY ASSIGNMENTS – Graded activities in the laboratory differ by week and from topic to topic based on the skills or concepts emphasized in that lab. You may be asked to participate in different aspects of the scientific process including generating research questions, posing hypotheses, collecting, analyzing and interpreting data, and communicating scientific information to your peers. **You must be present in lab to receive the points for those assignments.**

Grading Policies and Formulae:

GRADING: A \geq 93% A- = 89.9% B+ = 87% B = 83% B- = 79.9%
C+ = 77% C = 73% C- = 69.9% D+ = 67% D = 63%
F \leq 59.9%

ASSIGNMENTS	Total pts.
Exams (4 x 100 pts. each)	400 pts.
Online Quizzes (12 X 5 pts each – 2 lowest scores dropped)	50 pts.
Lecture activities (5 x 10 pts each)	50 pts.
Lab Activities	160 pts.
Animal Diversity Group Presentation	40 pts.
TOTAL	700 pts.

Grading and due dates: I will return graded material no later than 1 week after the assignment is due (2 weeks on rare occasions). A grade for an assignment will be penalized **10%** for each calendar day it is late. No assignments will be accepted after the final exam. If you believe I've made a mistake in grading your work, you must bring your concern to my attention within one week of receiving the graded assignment and I will reevaluate it outside of class time. I will not reconsider the assigned grade after one week. Please note that your grade at the end of the class will be based solely on the assignments and exams turned in up to and including the final. No extra projects, no re-submissions, no re-takes or no extra credit will be given to raise a grade no matter how close you are to the next letter grade. Please do not ask; the answer will be no. In addition, attending tutoring or office hours, class participation, and overall effort in the class will help improve your understanding but will not be considered when assigning grades.

COURSE POLICIES AND STATEMENTS

Absence Policy: Regular attendance to both lecture and laboratory sessions are required. Make-ups will **only** be allowed in the case of excused absences such as a documented illness (doctor's note required) or other documented emergency. If you are involved in University supported athletic teams or organizations I must be notified of absences at least TWO weeks in advance and as soon as possible if the activity will require you to miss a lecture or lab exam. If you need to be excused from class/lab due to a religious holiday, you **MUST** tell me within the first three weeks of class in order for the absence to be considered excused. If you have an excused absence, then I will do my best to see that you can make up an assignment, but beware that there is NO guarantee that you can make up assignments (make-ups may be difficult to do with some labs). Make-ups will not be allowed after a week of the original due date. Absences that are not excused include (but are not limited to) car problems, public transportation issues, wedding/baby shower, sick without documentation, taking sister/friend/grandma to the dentist/doctor/mechanic, and going out of town/trips.

Academic Policies: Academic misconduct (as outlined and defined by Chapter 14 in the Academic Handbook. <https://www.uwsp.edu/acadaff/Pages/handbook.aspx>) will NOT be tolerated in this course. *As a student you are expected to show integrity and honesty!* Cheating or plagiarism related to any of the course assessments *will not be tolerated* and result in a score of zero for that assessment.

Disability Services: Any student who feels that he/she may need an accommodation based on the impact of a disability should contact the Disability and Assistive Technology Center (Room 609 Albertson Hall, datctr@uwsp.edu). If you have already registered with this office and would like to discuss your class accommodations for the semester, please set up an appointment to meet with me privately.

Emergencies: In the event of a medical emergency call 9-1-1 or use Red Emergency Phone in the hallway outside of the classroom. Offer assistance if trained and willing to do so. Guide emergency responders to victim.

In the event of a tornado warning, proceed to the first floor of the CBB Building where there is designated shelter rooms. In the event of a fire alarm, evacuate the building in a calm manner. Meet outside the building and notify instructor or emergency command personnel of any missing individuals.

Active Shooter/Code React – Run/Escapes, Hide, Fight. If trapped hide, lock doors, turn off lights, spread out and remain quiet. Call 9-1-1 when it is safe to do so. Follow instructions of emergency responders.

See UW-Stevens Point Emergency Procedures at www.uwsp.edu/rmgt/Pages/em/procedures for details on all emergency response at UW-Stevens Point.

COURSE COMMUNICATION AND RESOURCES

Canvas and Email Addresses: I will frequently post reading materials, change the course schedule, post your grades, and may require that you turn in assignments on Canvas. *It is your responsibility to regularly check Canvas as well as your UWSP e-mail address.* You **must** use your UWSP e-mail account for all e-mail communication. Please plan ahead and allow time for a reply. I can usually reply within 24 hours; if it takes more than 48 hours for me to respond, I may not be receiving your e-mails. Please get in touch with me ASAP. I have a lot of students in multiple classes so do not assume I can figure out who you are

simply by looking at your e-mail address. You **MUST** include the **course** you are in (BIO 160) in the subject line as well as your **name you use in class and your last name** in the body of your e-mail. Also, please use the subject line wisely. If you just write “BIO 160: Hello” in the subject line, your e-mail will probably move to the bottom pile of my readings. If you instead wrote “BIO 160: Confusion about invertebrate taxonomy,” then it will be at the top of my priorities to respond because I can tell you are confused about a course topic.

Tutoring: The Tutoring-Learning Center (TLC) offers free group and drop-in tutoring to support you in your biology classes. In addition, the TLC offers the option for individual biology tutoring sessions. The tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and biology content knowledge to help others succeed. Discussing biological concepts and processes together clarifies and solidifies knowledge, and the tutors are eager to study with you. If you have questions about the schedules or would like to make an appointment, please visit the TLC in ALB 018 (library basement), email (tlctutor@uwsp.edu), or call (715) 346-3568 for information.

Course Schedule (Tentative):

Week	Day	Lecture Topic	Reading	Laboratory Topic
<i>Theme: Basics of Life and What are the building blocks of animals?</i>				
1	M 9/2	Labor Day Holiday		No Lab
	W 9/4	Introduction to Animal Biology	1	
	F 9/6	Chemistry of Life	2	
2	M 9/9	Water and Life	3	Microscopy and Cells
	W 9/11	Biomolecules	5	
	F 9/13	Tour of the Cell	6	
3	M 9/16	Cells: Membranes and Organelles	7	Properties of membranes: Diffusion & Osmosis
	W 9/18	Cells: Metabolism and Respiration	8	
	F 9/20	Cells: Metabolism and Respiration	9	
4	M 9/23	Cells: Signaling/Communication	11	Properties of enzymes
	W 9/25	Cell Cycle	12	
	F 9/27	Exam 1		
<i>Theme: What processes produce the diversity of animals?</i>				
5	M 9/30	Cell division: Meiosis and Sexual Life Cycles	13	Metabolism
	W 10/2	Cell division: Meiosis and Sexual Life Cycles	13	
	F 10/4	Genes and Inheritance	14	
6	M 10/7	Genes and Inheritance	14	Mitosis & Meiosis
	W 10/9	Chromosomal basis for inheritance	15	
	F 10/11	Gene Expression	17	

7	M 10/14	Gene Expression	17	DNA Transcription and Translation
	W 10/16	Descent with Modification	22	
	F 10/18	Speciation	24	
8	M 10/21	Phylogenetics and Diversity	26	Phylogenetics and Evolution
	W 10/23	Phylogenetics and Diversity	26	
	F 10/25	Exam 2		
Theme: How can we understand the different types of animals and How do they work?				
9	M 10/28	Animal Development and Diversity Overview	32, 47	Invertebrates 1 (Porifera, Cnidaria, Platyhelminthes, Annelida, Mollusca) BRING DISSECTION KITS
	W 10/30	Invertebrates: Sponges, Cnidarians, and Lophotrochozoans	33	
	F 11/1	Invertebrates: Ecdysozoans	33	
10	M 11/4	Vertebrates: Chordate Evolution, Echinoderms, Fish, Amphibians	34	Invertebrates 2 (Nematoda, Tardigrada, Arthropoda) BRING DISSECTION KITS
	W 11/6	Vertebrates: Reptiles, Birds, Mammals	34	
	F 11/8	Animal Form and Function	40	
11	M 11/11	Animal Form and Function	40	Dueterostomes 1: Fish and Amphibians BRING DISSECTION KITS
	W 11/13	Animal Nutrition	41	
	F 11/15	Gas Exchange	42	
12	M 11/18	Immunology	43	Dueterostomes 2: Reptiles, Birds, Mammals BRING DISSECTION KITS
	W 11/20	Osmoregulation & Excretion	44	
	F 11/22	Exam 3		
13	M 11/25	Hormones & Endocrine System	45	No Labs Holiday
	W 11/27	Nervous System	48	
	F 11/29	<i>No Class Thanksgiving</i>		
Theme: What roles to animals play in the environment?				
14	M 12/2	Animal Behavior	51	Dueterostomes 3: Reptiles, Birds, Mammals Continued BRING DISSECTION KITS
	W 12/4	Population Ecology	53	
	F 12/6	Population Ecology	53	
15	M 12/9	Community Ecology	54	Practical/Presentations/Wrap-up
	W 12/11	Community Ecology	54	
	F 12/13	Review/Catch-up		
16	Thurs 12/19	Final Exam 2:45-4:45		