

INTRODUCTION TO ANIMAL BIOLOGY
BIOL 160, Fall 2019
Section 03H (Honors)

Instructor: Dr. Karin Bodensteiner

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Office Hours: Wednesdays 2:00-3:30 p.m., Fridays 9:30-11:00 a.m., or by appointment

Lecture: CBB 165, Monday/Wednesday/Friday 12:00-12:50 a.m.

Laboratory: CBB 160, Monday 2:00-4:50 p.m.

Additional Course Information: Available through Canvas

Textbook: Urry, Cain, Wasserman, Minorsky, and Reece. (2017) Campbell Biology, 11th Edition. Pearson, New York. Available for rent in bookstore.

Laboratory Manual/Exercises: Will be posted on Canvas and made available in the laboratory.

Additional Items:

1. Dissecting kit. Available for purchase in bookstore.
2. Safety goggles. Available for purchase in bookstore or in local stores.
3. Strongly recommended for laboratory: rubber or plastic gloves. Available for purchase in local stores.

Course Description:

This course will introduce students to the amazing and diverse world of animals. To do this, a wide range of topics pertaining to animal biology will be covered including (but not limited to): the chemistry of life, basic cellular biology, genetics, animal form and function, and animal diversity. To reinforce content information, we will also be pulling in information from outside sources from articles and other media for in-class discussions. This course meets natural science general education requirements by fulfilling the learning outcomes for this category of the general education program.

General Education Program Natural Science Learning Outcomes: (upon completing this requirement, students should be able to...)

1. Explain major concepts, methods, or theories in the natural sciences to investigate the physical world.
2. Interpret information, solve problems, and make decisions by applying natural science concepts, methods, and quantitative techniques.
3. Describe the relevance of aspects of the natural sciences to their lives and society.

Student Learning Outcomes: (with diligent effort on their part, students should be able to...)

1. Explain how scientific inquiry is different from other intellectual endeavors.
2. Recognize cell theory, inheritance, evolution, and developmental biology as the foundations of zoological science.
3. Integrate various levels of biological organization and their emergent properties.
4. Differentiate and classify animal body plans and organ systems.
5. Apply principles of zoological science to broader personal and societal issues.
6. Recognize critical thinking as a process of identifying, analyzing, evaluating, and constructing reasoning in deciding what conclusions to draw or actions to take.

Point Distribution:

Lecture Exams	4 @ 100 pts each
Laboratory	100 pts
Thought Questions	40 pts
Current Issues	50 pts
<u>Professionalism</u>	<u>50 pts</u>
Total	640 pts

Grading Scale (out of 100% of Total):

A ≥ 93-100	C = 73-76
A- = 90-92	C- = 70-72
B+ = 87-89	D+ = 67-69
B = 83-86	D = 60-66
B- = 80-82	F < 60.0
C+ = 77-79	

Important Dates:

Issue 1	Sept. 20	Exam 1	Sept. 27
Issue 2	Oct. 18	Exam 2	Oct. 25
Issue 3	Nov. 15	Exam 3	Nov. 18
Issue 4	Dec. 6	Exam 4	Dec. 16 (10:15 a.m. - 12:15 p.m.)
Issue 5	Dec. 16		

Exams and Assignments:

All exams, quizzes, and assignments will count towards the final grade (i.e. no grades will be dropped). If you have an unexcused absence, you will NOT be allowed to make up a missed quiz or assignment (i.e. skip at your own risk).

Exams and Laboratory Assignments: There will be four lecture exams over the course of the semester. Each exam is worth 100 points and will consist of multiple choice, definitions, fill-ins, and short answer questions. In addition, application of information provided in lecture to an unknown problem may be required. Course material will build over the semester and it will be important for you to remember and apply basic information learned early on to material covered later in the course. Points will also be awarded in the laboratory. These points will come from in-lab quizzes and assignments throughout the semester. Expect some form of quiz or assignment almost every week in lab.

Current Issues in Animal Biology: Over the course of the semester, we will read and discuss articles relevant to current issues in Animal Biology. Your instructor will provide the first four articles and you will be responsible for choosing the final article. For these assignments, you will be graded on your participation in the in-class discussion and the quality of a written summary (2-3 pages, typed, double-spaced, 12-point font) to be turned in on the date of the discussion (see above). For the article you choose, you will be graded solely on the quality of the article and the synopsis you provide.

Thought Questions: Approximately twice per unit (8 @ 5 pts each), you will be given thought questions, with a typed response/answer due the following week. These questions are intended to spur your thinking on content we are considering in lecture or laboratory, so there may not be a single, or even a correct, answer. For these assignments, you are encouraged to consult multiple sources and discuss your thoughts/ideas with your classmates. You will be graded (individually) on the quality of your typed response and discussion participation.

Professionalism:

Attendance: Your commitment to your classes is among the most important things in your life right now. You are expected to attend all lectures and labs and to arrive on time and ready to learn. Two unexcused absences from lab will result in a 1/3 reduction in your final grade. If you will miss a class due to a college-sanctioned event, you must notify your instructor in advance and complete any coursework before the next scheduled lab or class period. Exams must be taken at the assigned time and

alterations to this schedule will only be made for personal injury or emergencies (e.g. death in the family, serious accident, or hospitalization). In such cases, evidence of some kind must be provided and you are expected to make arrangements within 24 hours of the exam to schedule a make-up. Make-up exams will occur within one week and format is at the discretion of the instructor. It is your responsibility to get notes for any missed classes.

Classroom Behavior: Complete mutual respect and courtesy is expected and all students should come to class ready to be engaged and actively participate in the classroom experience. Open, honest discussion is encouraged and will factor in to your professionalism grade. To facilitate active learning, cell phones and other electronic devices must be turned off and stowed away while class and/or lab is in session.

Course Assistance:

One-on-one tutors and walk-in tutoring are available to help students with lecture and lab material. Interested students should contact the Tutoring-Learning Center. Information on group tutoring to follow.

Grade Discrepancies:

Grades will be posted on Canvas throughout the semester. If there are discrepancies on any assignments, quizzes, or exams, they can be addressed with the instructor, in person, up to one week after the assignment is handed back in class. After this time, the grade will stand with whatever was originally granted.

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. Cheating or plagiarism will result in a score of zero for a give assessment and/or additional disciplinary action.

Disability Services:

Any student who feels that they 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 meet with me.

Emergency Response Guidance:

- In the event of a medical emergency call 9-1-1 and guide emergency responders to victim.
- In the event of a tornado warning, proceed to lowest level interior room without windows. Avoid wide-span structures (gyms, pools, or large classrooms).
- In the event of a fire alarm, evacuate building in a calm manner, meet on sidewalk to east of building, near UWSP sign. Notify instructor or emergency command personnel of any missing individuals.
- Active Shooter/Code React – Run/Escape, 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 protocols at UW-Stevens Point.

General Course Outline(*):	Chapter(s)
<u>Unit 1: Macromolecules and the Cell</u>	
Introduction/Overview	1
The Chemistry of Life	2 & 3
Macromolecules	5
Cellular Organization	6
Cell Membranes	7
Cellular Communication	11
<u>Unit 2: From DNA to RNA to Protein</u>	
Cellular Respiration	8 & 9
Mitosis	12
Meiosis	13
Patterns of Inheritance	14 & 15
The Molecular Basis of Inheritance	16
Gene Expression: From Gene to Protein	17
<u>Unit 3: Animal Diversity, Reproduction, and Development</u>	
Animal Diversity	32
Invertebrates	33
Vertebrates	34
Animal Reproduction	46
Animal Development	47
<u>Unit 4: Animal Form and Function</u>	
Basic Principles	40
Animal Nutrition	41
Circulation and Gas Exchange	42
Hormones and the Endocrine System	45
Neuronal signaling and the Nervous System	48 & 49
Osmoregulation	44

(*Please note: Course schedule and topics covered are subject to change.)

**BIOLOGY 160
LABORATORY SCHEDULE**

WEEK	DATES	EXERCISES
I	Sept 3-6	No scheduled lab
II	Sept 9	Microscopy & Cells; TQ* 1 Assigned (bring goggles next two weeks)
III	Sept 16	Diffusion and Osmosis; TQ 1 Due; TQ 2 Assigned
IV	Sept 23	Properties of Enzymes; TQ 2 Due
V	Sept 30	Metabolism
VI	Oct 7	Mitosis & Meiosis; TQ 3 Assigned
VII	Oct 14	Central Dogma; TQ 3 Due; TQ 4 Assigned
VIII	Oct 21	Evolution; TQ 4 Due
IX	Oct 28	Invertebrates I: Porifera, Cnidaria, Platyhelminthes, Annelida, Mollusca
X	Nov 4	Invertebrates II: Nematoda, Arthropoda, Tardigrada; TQ 5 Assigned
XI	Nov 11	Chordata I: Echinodermata, Hemichordata, Chordates through fishes; lamprey and perch dissection (bring dissection kits); TQ 5 Due; TQ 6 Assigned
XII	Nov 18	Chordata II: Reptilia through Mammalia; bird and rat dissection (bring kits); TQ 6 Due
XIII	Nov 25	Thanksgiving; Common Animals Presentation Preparation
XIV	Dec 2	Chordata III: Reptilia through Mammalia; bird and rat dissection continued (bring kits)
XV	Dec 9	Common Animals Presentations; TQ 7 Due; TQ 8 Assigned (TQ 8 Due in Lecture, 12/13)

*TQ = Thought Question