INTRODUCTION TO ANIMAL BIOLOGY
BIOL 160, Fall 2017
Section 4 (Honors)

INSTRUCTOR: Dr. Karin Bodensteiner
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Office Hours: Wednesdays 1:30-3:00 p.m., Fridays 9:00-10:30 a.m., or by appointment

CLASS MEETINGS:
Lecture: SCI A208, Monday/Wednesday/Friday 12:00-12:50 a.m.
Laboratory: TNR 355, Monday 2:00-4:50 p.m.
Final Exam: SCI A208, Monday, Dec. 18 10:15 a.m. to 12:15 p.m.
Additional Course Information: Available off of Desire 2 Learn (D2L)

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

REQUIRED FOR LABORATORY:
1. Biology 160 Rat Dissection Manual and Biology 160 Laboratory Manual and Supplement. Available for purchase in the bookstore.
2. Dissecting kit. Available for purchase in bookstore.
3. Safety goggles. Available for purchase in bookstore or in local stores.
4. 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.

COURSE OBJECTIVES: (by the end of the semester, the instructor will…)
1. Compare and contrast variation in form and function among the major groups of animals and their biological systems.
2. Provide hands on experience with living and preserved organisms.
3. Survey the various levels of biological organization from cells to ecosystems.
4. Emphasize the relevance of organismal biology to human health and happiness.

STUDENT LEARNING OUTCOMES: (by the end of the semester, the student will…)
1. Recognize cell theory, inheritance, evolution, and developmental biology as the foundations of zoology.
2. Integrate various levels of biological organization and their emergent properties.
3. Compare and contrast physiological processes in animals from different phyla.
4. Apply principles of zoology to broader personal and societal issues.

POINT BREAKDOWN:

Lecture Exams	4 @ 100 pts each
Laboratory	110 pts
Thought Questions	40 pts
Current Issues	50 pts
Professionalism	50 pts
TOTAL	**650 pts**

GRADE 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	

ACADEMIC INTEGRITY: Academic dishonesty in any form will result in disciplinary action in accordance with UW System Administrative Code.

DATES TO REMEMBER:		
	Issue 1 Disc.	**Sept. 22**
	Exam 1	**Sept. 29**
	Issue 2 Disc.	**Oct. 20**
	Exam 2	**Oct. 27**
	Issue 3 Disc.	**Nov. 17**
	Exam 3	**Nov. 22**
	Issue 4 Disc.	**Dec. 8**
	Issue 5 Due	**Dec. 13**
	Exam 4	**Dec. 18:** 10:15 a.m. to 12:15 p.m.; SCI A208

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. If there are students in the class who have a disability and need accommodation, please see me as soon as possible.

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.

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. If in SCI A208, meet on sidewalk to east of building, near tree sculpture. If in TNR, meet on sidewalk to west of building, near the Pointer sculpture. 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 Respiration	8 & 9
Cellular Communication	11
<u>Unit 2: From DNA to RNA to Protein</u>	
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>	
Phylogeny	26
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 5-8**	**No scheduled labs**
II	**Sept 11**	Microscopy & cells; TQ* 1 Assigned (bring goggles next two weeks)
III	**Sept 18**	Diffusion and Osmosis; TQ 1 Due; TQ 2 Assigned
IV	**Sept 25**	Properties of enzymes; TQ 2 Due
V	**Oct 2**	Metabolism
VI	**Oct 9**	Mitosis & Meiosis; TQ 3 Assigned
VII	**Oct 16**	Phylogeny & Classification; TQ 3 Due; TQ 4 Assigned
VIII	**Oct 23**	Deuterostomes I (Echinoderms, Amphibians, and Fish); TQ 4 Due
IX	**Oct 30**	Deuterostomes II (Birds, Reptiles, and Mammals)
X	**Nov 6**	Invertebrates I (Porifera, Cnidaria, Platyhelminthes, Nematoda); TQ 5 Assigned
XI	**Nov 13**	Invertebrates II (Mollusca, Annelida) (Bring dissection kits); TQ 5 Due; TQ 6 Assigned
XII	**Nov 20**	Invertebrates III (Tardigrada, Arthropoda) (Bring kits); TQ 6 Due
XIII	**Nov 27**	Rat Dissection I: Skeleton and muscles; histology of systems; Common Animals Quiz
XIV	**Dec 4**	Rat Dissection II: Digestive, respiratory and urogenital systems; TQ 7 Assigned
XV	**Dec 11**	Rat Dissection III: Circulatory, nervous, and sensory; TQ 7 Due; TQ 8 Assigned (Rat Anatomy Quiz and TQ 8 Due in Lecture, 12/15)

*TQ = Thought Question