

INTRODUCTION TO ANIMAL BIOLOGY SYLLABUS

Bio 160 – SEM II 2012-2013

Instructor: Dr. Jamee Hubbard

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Office Hours: Mon, Tue, & Thu 12-1 in TNR 339 (right next door to our lab)

Office: TNR 339

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Textbook: Raven, Johnson, Losos, Mason, Singer. 2007. *Biology, 8th Ed.* Bookstore Rental.

For Lab: *Introduction to Animal Biology Lab Manual* will be available on D2L, but you can purchase in the university bookstore only if you want a hard copy. Dissecting kit (plan to bring every week)

Course Description:

This course will introduce you to how animals work, from cells to organ systems, how traits are inherited, and how animals interact with and adapt to their environments. You will also learn about animal classification, diversity of animals, and evolutionary relationship between many different types of organisms covered in lab, from sponges to mammals, as well as how those evolutionary relationships take shape (i.e., how evolution occurs). Even if you are not a biology major, you will leave this course with information that will affect your life in some way, whether it is personally or professionally.

Course learning outcomes:

By the end of this semester, you should be able to:

1. Identify and describe cell components and cellular processes in animal bodies.
2. Describe the processes of inheritance and evolution and understand the significance of such processes
3. Identify and describe the functions of various organ systems found in animals, and compare and contrast these systems between various types of animals, from sponges to mammals.
4. Understand why and how we classify animals and be able to differentiate between them based on relevant characteristics.

Exams and Assignments, Points, Dates (tentative^a) (Projected Minimum Points = 623 +/-)

Lecture Exams	300 (+/-)	2/19, 3/12, 4/9, 4/30, Time TBD, Four at 75 points each
Final Lecture Exam	125 (+/-)	Thu, Dec 20, 2:45-4:45pm TNR 120
Lab Quizzes	120 (+/-)	6 minimum, 20 points each
Daily Quizzes	60 (+/-)	30 minimum, 2 points each, unannounced
Group quizzes, projects	Variable	variable number of group quizzes and projects, see last page
Lab Assignment 1	12	Due in lab (color arteries/veins), see last page
Lab Assignment 2	6	Due in lab (label heart, circulation diagram), see last page

- Lecture exams can have a combination of multiple choice, true/false, short answer, and essay. Lab quizzes typically are short answer.

- **Quizzes and Assignments can be added at any time at my discretion.**

- **Final exam is comprehensive;** study your old exams; exam will include new stuff, if any, since last exam. I *hope* to have all grades up-to-date by Tuesday May 14 at 5pm; **if you have an A- or higher by then, you will be notified that you may opt out of the final exam.** *In order to opt out of the exam, you must also attend lecture and lab through the last day of class.*

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

Attendance:

- Attendance for lecture and lab is mandatory, and there is a strong positive correlation between the amount of time a student spends in class and his or her final grade.
- If a quiz, exam, or other assignment is missed and you are not involved in a university-sponsored event, *I will evaluate whether or not to excuse the absence* and how to administer the assignment on a one-on-one basis. Daily quizzes, pop quizzes, and any extra credit assignments cannot be made up unless you have an official university excuse and/or I am notified ahead of time of your absence. If you are truly sick and need to stay home, that is fine, but please let me know as soon as possible about your absence.
- See UWSP 22.03 in the university handbook regarding absences due to religious beliefs (and no, hunting is not considered a religious belief.)

I do not give extra credit assignments on an individual basis, so please do not ask: I would rather you use any extra time you have toward your best effort on the assigned material. I will work with you in any way I can to help you get a better grade *on future course work*.

Students with Disabilities: Students with disabilities are welcome and encouraged in this class. You should contact the Office of Disability Services during the first two weeks of the semester if you wish to request specific accommodations. Also, if you have a medical problem (for example, serious migraine headaches that require medical attention, or depression) that may cause you to miss class or exams often, please contact the Office of Disability Services so your professors can be notified appropriately of accommodations that should be made for you.

Students' Rights and Responsibilities & Academic Misconduct: You can find out about your rights and responsibilities as a UWSP community member at <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>. Any form of cheating, plagiarism, or any misrepresentation of your work, or if you are knowingly assisting someone in cheating, this will result in a grade of zero (0) points for that test, quiz, or other assignment. You can find out more about academic misconduct on pages 4-9 of the above Community Bill of Rights and Responsibilities electronic link.

Class Conduct: I expect good conduct and a high level of respect in the classroom, between you and your peers and between you and me. If there is repeat misconduct in the lecture or lab, a minimum of five points will be deducted from your grade for each offense. Misconduct can include, but may not be limited to: texting, answering or making phone calls, talking while I'm lecturing, repeatedly entering the classroom late (unless I have been notified), and lack of participation in group exercises. *If a cell phone goes off in my class, or I catch someone texting, I might just give **the whole class** a pop quiz!*

Tentative Lecture Schedule

Pages in Raven et al.

Introduction to Zoology

The Cell:

You will notice that this is a very long unit, and in fact it will take up probably $\frac{1}{2}$ to $\frac{3}{4}$ of the class. That is because *everything* that happens within an animal - and I mean everything - comes down to what is happening inside of, or because of, cells.

Chemistry of life & origin of cells	25-30, 33-57, 504-507 (molecules/bonds: 17-24)
Cell structure & function	59-84, 85-104, 165-184
Cell Cycle	277-284, 286-302 (RNA & protein synthesis), 188-204
	(cell cycle & division), 255-276 (DNA replication)
Gamete production	1067-1086, 205-235 (meiosis), 1073-1080

Within the cell cycle, we will look at the functions of the cell at each stage, including such functions as RNA & protein synthesis, muscle contraction, DNA replication, mitochondrial replication, and mitosis

Individual and Population Genetics:

Inheritance	219-236
Evolution, Speciation	415-452, Film <i>Evolution: Great Transformations</i>
Co-evolution shapes life	Film: <i>The Eternal Arms Race</i>

Systems

Digestion and nutrition	963-982
Cellular respiration	105-107, 109-115, 119- 141
Circulation & Respiration	983-1016
Nervous Systems, Sense Organs	869-918
Endocrine Systems	919-942
Temperature & Water Regulation	

Lab Assignment 1: Color Arteries/Veins (12 Points), due *in lab* the week of April 15

The purpose of this assignment: to help you determine the differences between arteries and veins on the diagrams and make it easier to compare the vessels in your diagrams to the vessels in your rat. Any vessel carrying blood from the heart to the target tissue is called an artery and should be colored red or pink. You can tell it is an artery because it originates from the aorta or other vessels that originate from the aorta. Any vessel carrying blood from the tissues to the heart is called a vein and should be colored blue. You know it is a vein if it leads to the cranial or caudal vena cava or other vessels that lead to the cranial or caudal vena cava. Make a copy of the pages beforehand if you wish to use uncolored diagrams to help you study.

Pages that should be colored are 2-56, 2-57, and 2-58 of the lab manual file on D2L titled *Rat Dissection III: Circulatory, Nervous, and Sense Organs*.

Lab Assignment 2: Label Pork Heart/Circulation (6 Points) , due *in lab* the week of April 15

The purpose of this assignment: to make it easier to compare the components of the heart on your diagram with the pork hearts you are seeing in lab. The diagram on page 2-53 shows the flow of blood through the heart. The diagrams on 2-54 and 55 show the various components of the pork heart. The numbers on all three of those pages *correspond to the numbers in the text on pages 2-48 and 2-49*, so you can use the text to figure out what component is represented by the number on the diagram. Make a copy of the pages beforehand if you wish to use unlabeled diagrams to help you study. **Pages that should be labeled are 2-53, 2-54, and 2-55 of the lab manual file on D2L titled *Rat Dissection III: Circulatory, Nervous, and Sense Organs*.**

*You will automatically lose 50% if the **above** assignments are late. You will receive 0 points if more than one week late.*

Lecture Group Work:

You will be assigned to groups of approximately 4-5 students with whom you will work on lecture activities, discussion, and/or quizzes. The lecture activities will provide an opportunity for you to work in small discussion groups where you can bounce ideas and information off each other as you work on your assignments. It will also provide a relaxed, variably paced environment in which you can feel free to ask me for assistance on the current topic. I realize that this course is comprised of students who have had some biology and chemistry in high school and college, as well as students who have never had a biology or chemistry class. Therefore, the groups will be designed to have a mix of students with biology and chemistry experience and students without. I want to make sure, no matter your interest or level of experience, that you are prepared for working in your groups, so a requirement for entering class on those days when we you will do group work will be that you complete an online D2L quiz based on that day's topic. I will announce when group activities are coming up and when the D2L quizzes are available for you to take. Again, this will be a requirement for entering class on the day that you will be working in groups, and you do not want to miss the group days because your group assignments and quizzes will be worth points.

Additional Class Information:

Each semester I try new activities that I hope will help my students connect to the topics. This semester I will be trying some new teaching techniques, including new types of group activities and flipped classrooms. I'm hoping these techniques will help you connect to the topics and increase your retention and understanding. Bear with me as I transition into these new activities!