

## Course Organization & Grading Procedures

**Course description:** *ZOOL 310. Animal Physiology* (4). Comparative organ system physiology of animals. Adaptive strategies. [Prereq: BIOL 105, CHEM 109, PHYX 106, ZOOL 110, or their equivalents. All with grades of C- or higher. Weekly: 2 hrs lect, 6 hrs lab.]

This course is worth a total of 570 points split between the lecture and laboratory portions of the course. The points will be distributed as following. A *Question Set* on membrane potential worth 25 points (about 4% of your grade) will be due in lecture on September 23. The *Question Set* will make use of material presented in both lecture and lab; and will be distributed via *Moodle* on approximately September 9. There will be two midterm examinations, each worth 100 points (each about 18% of your grade), and a cumulative final examination worth 150 points (about 26% of your grade). The remaining 195 points (about 34% of your grade) will be earned via laboratory activities. These laboratory activities consist of two *Review Sheets* from the *PhysioEx Laboratory Simulations*, four *Laboratory Reports* and an independent student project. Each *Review Sheet* or *Laboratory Report* is worth 20 points (approximately 4% of your grade)(This doesn't sound like much, but if you fail to turn in even one of these assignments the grade you earn in the course will probably be lowered by one-third letter grade!). In addition, you will perform an independent laboratory project during the week of November 29. On November 8, you will turn in a project proposal worth 15 points, and on December 9 you will turn in a written final report (worth 45 points). In the last laboratory period (December 8), your group will present an oral report on your independent project (15 points). **Lateness:** The *Question Set*, *Review Sheets* and *Laboratory Reports* (including the proposal and final independent project report) will be docked 2 points for every day they are late. **The Question Set must be turned in by September 24(one day late) to receive any credit.** The reason for this absolute deadline is that the due date is very close to your first midterm examination. I will post an answer key late in the day on September 24 so that you can check your answers prior to the exam.

### Grading Scale

The student with the highest point total in the class will be considered perfect (!) and her/his grade will be considered 100%. The A/B dividing line will be 90% of the top student's score, the B/C line will be 80%, the C/D line will be 70%, and the D/F line will be 60%. Plus and Minus grades (e.g., A-, B+) will be assigned around the dividing lines. The dividing lines between grades will be determined *prior* to adding in any Extra Credit points you may have earned. Following each of the midterm exams I will provide a grading scale so that you can see your approximate grade up to that point in the course.

### Exams

The two Midterm Examinations will be administered during your normal **laboratory period** (in room 328 Science B) on September 29 and November 1 respectively. The Final Examination will be administered in the lecture hall (564 Science A) during the Final Exam period on Tuesday, December 14 from 17:00 – 18:50 (5:00 PM – 6:50 PM). **Exam material will usually be restricted to material presented in lecture and laboratory.** Generally, material in the text that is not covered in lecture or laboratory will NOT be covered on exams. However, I may announce that certain sections of the text or supplementary readings are considered fair game for exam questions (*you can be certain there will be at least an exam question about such readings*). The first midterm exam will cover material presented in lecture & laboratory up to September 23. The second midterm exam will cover material presented from September 28 through October 26. **The final exam will be cumulative.** Approximately two-thirds of the questions on the final will concern material presented from October 28 through the end of the course. The other one-third of the questions will concern material presented for the first two midterm examinations. This cumulative material will generally concern the most important concepts covered in the first two exams. Laboratory exercises will often reinforce or amplify on the themes introduced in

lecture. During some laboratory sessions, I will present a “formal lecture” prior to the laboratory exercise. Such “formal lectures” are an extension of the lecture portion of the course. Thus, laboratory material is considered fair game for inclusion on the lecture examinations. Many types of exam question formats will be used including: multiple choice, short answer, essay, matching, as well as some esoteric question forms. Sample questions will be posted on the *Moodle* web site (probably about a week before each exam). You should be able to complete midterm examinations in an hour or so. However, you will have the entire laboratory period to complete the exam. The exam will be the only activity during those laboratory periods.

### Laboratory

Your participation in laboratory exercises will be considered when grades are assigned. **ANYONE NOT FULLY PARTICIPATING IN CARRYING OUT ALL LABORATORY EXERCISES WILL EARN A LOWER GRADE. UNEXCUSED ABSENCES OR FAILURE TO FULLY PARTICIPATE IN ANY LABORATORY EXERCISES WILL ASSURE THAT YOU EARN A LOWER GRADE IN THE COURSE.** Laboratory handouts will be available at the *Moodle* web site. It is your responsibility to print out and read this material prior to lab. **Failure to properly prepare for laboratory exercises may lead to the appearance of pop quizzes.** *PhysioEx* and *iWorx* exercises are in *Adobe Acrobat* format and the files are often quite large. If you have a slow dial-up Internet connection, you may want to consider accessing these files from a campus computer.

**Important hint for printing *Adobe Acrobat* documents on University computers.** Several of the documents distributed for this course are in *Adobe Acrobat* format. This can often cause difficulties in printing these documents out on University computers. I can assure you that there are NO problems with any of the documents posted on *Moodle* (computer lab people often blame the document, not where the problem actually lurks – i.e., the network). I check each and every document immediately after posting on *Moodle* to ensure they can be downloaded correctly. If you have your own computer & printer, you probably can ignore the following. Depending on the version of *Acrobat* installed on the computer & its operating system (*Mac* vs. *Windows*), the following instructions may not precisely correspond to what you see on your computer. On *Windows* computers, after opening the document from the *Moodle* web site and invoking the print command in the *Acrobat* portion of the window, a dialog box will open (sometimes called a *print window*). This dialog box specifies printing options (including what printer you're using, which pages you want to print, etc.). On *Acrobat 9*, toward the bottom of this screen there is a button labeled “Advanced”. Click on this button & in the window that opens there will be a check box labeled *Print as image*. Make sure this option is checked. On *Macintosh* computers, in the *print window*, click on *General* and then chose *Acrobat Reader*. When you do this the text in the print window will change. Find the area where it says *Print Method*. Change this option from *Postscript* to *Print as image*. Using the *Print as image* option will allow *Acrobat* documents to print on all computers. If you have your own computer & printer, you will probably not need to select the *Print as image* option to successfully print these documents.

We will have four types of activities during the laboratory periods. The first of these are traditional laboratory exercises. When these exercises involve living preparations, most of the time the unfortunate victims will be Zoology 310 students. The second type of activity involves computer simulations of physiological processes. Computer simulations have both good and bad points. The good points include: no animals are harmed by the exercise, the exercise always works, and you are not required to perform what may be technically difficult procedures that may distract you from the intellectual content of the exercise. The bad points include: the exercises always work, and they work the same way each time you perform the exercise, and you do not have to perform the real procedure. The responses of real preparations vary because of things the experimenter can control (including technical proficiency) as well as uncontrollable factors. Believe it or not, seeing experiments fail is a valuable experience – it gives you a better appreciation on how scientific knowledge is accumulated. Behind virtually every paper in the scientific literature lurk many experiments that didn't work, and didn't make

it into print. Manipulating real tissues is also a valuable experience. One of the most profound experiences of my life was the first time I held a beating heart in my hands. The power of the organ was something I had not appreciated until I felt it with my own senses. Simply watching a heart beat is *not* the same thing and is quite different than feeling the contractions. The third activity will be a student-designed laboratory project (more details below). Our last type of lab activity is **SURVIVOR!**

**SURVIVOR!** is an exercise inspired by the television show *Survivor* with a touch of *Who Wants to be a Millionaire* and *The Weakest Link*. In reality, **SURVIVOR!** is a sneaky way to have a fun review session prior to an exam. **Participation in Survivor! is a requirement of the course.** To give you some motivation, the Survivors will win **Fabulous Prizes!**

You can earn up to 120 points by completing two *Review Sheets* that accompanying laboratory exercises in the *PhysioEx* computer simulation and four *Laboratory Reports* (20 points each). In general, these assignments will be due one week after completion of the exercise. *PhysioEx* exercises and the accompanying *Review Sheet* as well as other *Laboratory Exercises* will be available on the *Moodle* web site. Details for completing *Laboratory Reports* will accompany each exercise. In general, you will be asked to report the results of the exercise (often in graph format) and to answer a few questions on the interpretation of the data.

The final 75 points of laboratory credit will be earned via an independent student project. This will be a project of your own design. You will earn 15 points for a project proposal (due November 8 at 11:59 PM). This proposal should be at least 5 pages long (1" margins, double-spaced). You should talk to Professor O'Gara well before this due date and bounce ideas off of him regarding your project. We are constrained by available equipment and budget, so you may have a great idea that we just can't do because of these limitations. The project proposal should have a literature review that gives the intellectual background for your project. The proposal should include a reference list; however, the reference list is not included in the 5 page proposal length. In addition, you should provide as many details of your experimental procedures as possible (realizing that you may have to modify these when you start your experiments – a preliminary experiment conducted outside of normal class hours is always a good idea). The final written project report (due December 9 and worth 45 points) should include an **Abstract, Introduction, Methods and Materials, Results, Discussion, and References**. Depending on your project, the report should include figures and/or tables as appropriate. Each group (usually composed of 4 students) will turn in a single report. Each laboratory group will make a 15-minute oral presentation of their independent project results during the last laboratory period (December 8). You will present your results using *Microsoft PowerPoint*. The presentation should be professional and polished. The presentation is worth 15 points. Finally, each student will turn in a confidential **peer grade report**. In the peer grade report, you will assess the contribution of your group partners to the final product. If everyone carried their weight, everyone in the group will earn the same grade. However, if your group has a slacker, you can let me know about this via the peer grade report and the slacker's grade will suffer. Note: I examine all of the peer grade reports to assess each individual's contribution to the project). If someone goes above and beyond the call of duty, you can also let me know this (However, I take a dim view of groups who rate all their members as going above and beyond the call of duty – I can judge this from your report. If you perform a project that requires more work than the average project, I can tell this from the final report – and will reward you for the extra effort.) Peer grade reports will be submitted via *Moodle* (instructions will be provided) and will be strictly confidential (I will not tell the other members of your group how you rate them). **Failure to turn in a peer grade report will result in the deduction of 5 points from your individual project report.**

#### **A.D.A.M. Interactive Physiology CD-ROMs**

To assist you in learning the material in a number of areas in the course, I have placed on Reserve in the library three copies of the *A.D.A.M. Interactive Physiology 7-System Suite CD-ROM*. The CD-ROM has sections the Nervous System I, Nervous System II, Muscular System, Cardiovascular System, Respiratory System, and Urinary System [there's one section on the CD we won't use]. In addition,

A.D.A.M. has made two additional modules (on the Endocrine & Digestive Systems) available via the web (they're trying to entice you to buy the whole set). These CDs (& the web sites) are wonderful learning tools; however, they are very information dense. To help guide you through each section of the CD (or web site), I will provide you with a Study Guide. To encourage you to use the CDs, each Study Guide will also contain several questions about information presented on the CD. **The question set for each section of the CD (& the web sites) is worth 2.5 EXTRA CREDIT points** (20 points total). This doesn't sound like much, but completing all of these extra credit questions will almost certainly raise your grade by 1/3 letter grade (e.g., going from a B+ to an A-). ***More importantly***, viewing these CDs will greatly increase your understanding of physiology (& thereby increase your exam scores!). You will be informed of the due date of each question set when the Study Guide is distributed. The question sets will be turned in via *Moodle*. Instructions for downloading & uploading of these question sets will appear on the web site.

As mentioned above, these CDs are very information dense. To facilitate your use of the CDs, I have a few suggestions. First, read the relevant section of the textbook prior to viewing the CD – that way more of information in the CD will be familiar to you, and the amount of information overload will be reduced. I also recommend that you break up viewing a CD into several sessions. While it is possible to completely view a CD in two or three hours, your poor brain will probably reach saturation long before the end. You can view the CDs in the Learning Commons computer lab in the Library or within the library on your laptop computer (be sure to bring headphones in either case!!). The main computer lab in the Library has usually lacked some of the plug-ins necessary to run the CDs. On a *Windows* computer, when the CD is inserted the program will try to install itself (or you can click on *SETUP.EXE*). You can let it do this if you want – but it isn't necessary. The CD runs through a web browser & will require several common plug-ins (*Flash*, *Shockwave*, & *QuickTime*). If your computer lacks these plug-ins, the installation program will install them & will place a shortcut icon on your desktop (which can be deleted after use). If the CD refuses to run on your computer, install the latest versions of each of the plug-ins. *Flash* and *Shockwave* are available from Adobe (<http://www.adobe.com>) and *QuickTime* is available from Apple (<http://www.apple.com/support/quicktime/>). The CD can be run without allowing the installation process to proceed (assuming you have the plug-ins). Open the CD and then the folder called *home*. Click on this file to run the program. Within this folder is a file called *index.html*. (Note: there are files called *index.html* in some of the other folders. These files are not the same file as in the *home* folder; thus, the program will not run properly.) Two portions of the ADAM System (on the endocrine & digestive systems respectively) are available via the Internet and run without incident on web browsers regardless of which type of computer you use (assuming you have the proper plug-ins).

**Pay-for Print.** Beginning with the fall 2010 semester, printing in all University computer labs (including the Animal Physiology lab) will use a Pay-for-Print system. Black and white printing will cost 4 cents/page and color printing (where available) will cost 25 cents/page. **Note:** some documents for Animal Physiology may contain color that is not necessary for comprehension and use of the document (for example, a colored section heading). Make sure the color print capability is turned off before printing such documents if you do not think the color is necessary for you use. How you turn off color printing varies somewhat depending on what computer program and printer you are using. Most times you will be able to turn off color printing somewhere in the *Print* window or in the advanced settings in the *Print* window. In *Microsoft PowerPoint 2007*, you may turn off color display in a particular document under the *View* tab (earlier versions of *PowerPoint* have this capability also). **Before the semester starts** (or as soon as possible), make sure you have money available on your C-card to pay for printing. Funds can be added to your C-card at the HSU Bookstore, the Housing and Dining Cashier's Office or online (<http://c-card.humboldt.edu>). More information about Pay-for-Print can be found at <http://www.humboldt.edu/its/payforprint>.

**Study Strategy:**

**It is assumed that you are familiar with the material presented in the prerequisite courses listed in the Zoology 310 course description at the beginning of this document.**

I recommend that you **read the textbook in preparation for each lecture and laboratory. You will need to read the textbook again prior to exams**, so start studying for these exams early! Note taking is easier and more reliable if you prepare. Skim over the details on this first reading, but study the major topics and vocabulary. Every week you should review the notes you have taken in class, so that if you have questions you can clarify points prior to the exam. **I also recommend that you read over all your notes for the entire semester each and every week.** Material presented during August will seem like ancient history in December. Frequent rereading of your notes will keep you familiar with the concepts presented early in the semester. Mastery of a concept presented early in the semester is often necessary to understand material presented late in the course. In addition, since the Final Exam is cumulative, frequent rereading of your notes will make studying for the Final that much easier.

I encourage you to set up study groups (either formally or informally). Divide up the topics and make presentations to each other summarizing the important points. Treat each presentation as a mini-lecture. Write out lecture notes and decide on the figures you'll use to present this material to your "class". To really learn this material, give your lecture several times. When you no longer need to refer to your lecture notes, you have learned the material. There is no better way to learn material than having to teach it to someone else (How do you think your professors learn the material they present to you?). Quiz each other mercilessly! Play evil professor and try to come up with questions that the real evil professor may inflict upon you during a real exam. Often one of the most valuable aspects of this quizzing is that you find out what you didn't understand.

**Check your e-mail regularly.** I will utilize e-mail to make course-related announcements. All e-mails will be sent to your HSU e-mail address only (as per University policy). **Be aware that the major e-mail systems (Yahoo, Hotmail, etc.) routinely will reject all mail originating from the HSU e-mail system.** This occurs because spammers have hijacked HSU e-mail accounts. This seems to happen at least once each semester. That means that if you have set up your HSU account to forward your e-mail to another account, those messages may not find their way into your off campus mailbox. Therefore, I urge you to routinely check your HSU account. I have several e-mail accounts and I check each one regularly. You should too. If you don't check your HSU e-mail account regularly, you may miss vital communications from this and other courses. **Never send your password to anyone.** Such requests are **never** legitimate.

**Lecture exams** will emphasize the material presented in lectures; however, laboratory material that is directly related to lecture material is also considered fair game for lecture examinations. You must study the textbook as well as the lectures to do well in the course. However, you will generally not be responsible for material presented in the text that is not presented during lecture.

**Don't put off reviewing for exams - start well before the deadlines approach!** Prepare for each lecture. Take thorough notes, and review them right after each lecture. It is not unusual for a topic to seem to make perfect sense during lecture; however, the topic no longer makes sense when you review your notes (or read the text). Make sure you clear up any difficulties you have with the material **prior** to the next lecture (That's why I'll always ask before I start a lecture if you have any questions.). Your ability to understand subsequent lectures is often dependent upon your understanding of material presented in previous lectures. Study the material each weekend, emphasizing the current week, but also review material from all portions of the course. The material and pace of work in this course are within everyone's capacity, but they will rapidly overwhelm you if you do not keep up!

**How much time am I expected to put into studying for this course?** This course contains a lot of material, and the number of factoids you are expected to learn can be intimidating. However, if you follow these guidelines, you can reduce the amount of stress and panic that occurs during studying for the exams. As expected of most science courses, you are expected to put in at least 2 hours of out of class study time per in class credit hour. Since this is a four-unit course, you should expect to put in at least 8 hours per week of out of class study time.

### **Other Issues**

**Students with Disabilities:** Persons who wish to request disability-related accommodations should contact the Student Disability Resource Center in the Library basement, 826-4678 (voice) or 826-5392 (TDD). Some accommodations may take up to several weeks to arrange. <http://www.humboldt.edu/disability>. If you plan to take examinations in the Testing Center, please notify Prof. O’Gara of this and let him know your appointment time. Remind Prof. O’Gara before each exam that you will be taking the exam in the Testing Center.

**Add/Drop policy:** Students are responsible for knowing the University policy, procedures, and schedule for dropping or adding classes. <http://www.humboldt.edu/~reg/regulations/schedadjust.html>

**Emergency evacuation:** Please review the evacuation plan for the classrooms (posted on the orange signs), and review [http://studentaffairs.humboldt.edu/emergencyops/campus\\_emergency\\_preparedness.php](http://studentaffairs.humboldt.edu/emergencyops/campus_emergency_preparedness.php) for information on campus Emergency Procedures. During an emergency, information can be found campus conditions at: **826-INFO** or <http://www.humboldt.edu/emergency>

**Academic honesty:** Students are responsible for knowing policy regarding academic honesty: [http://studentaffairs.humboldt.edu/judicial/academic\\_honesty.php](http://studentaffairs.humboldt.edu/judicial/academic_honesty.php) or <http://sorrel.humboldt.edu/registrar/catalog/documents/sections/regulations.pdf>

**Attendance and disruptive behavior:** Students are responsible for knowing policy regarding attendance and disruptive behavior: [http://studentaffairs.humboldt.edu/judicial/attendance\\_behavior.php](http://studentaffairs.humboldt.edu/judicial/attendance_behavior.php)