

**BIO 319/519 A09C ANIMAL PHYSIOLOGY
SPRING 2014 COURSE SYLLABUS**

Instructor: Dr. Courtney Kurtz
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Office Hours: 10-11:30 am M; 12:15-1:30 pm W
Also by appointment, as needed

Other Lab Instructor: Andrew Bosma
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Timetable:

Lecture	M W	3-4:30	HS 107	Kurtz
Lab A01L	T	9:40-12:40	HS 167	Kurtz
Disc A01D	Th	9:40 – 10:40	HS 266	Kurtz
Lab A02L	T	1:20 – 4:20	HS 167	Kurtz
Disc A02D	Th	11:30 – 12:30	HS 266	Kurtz
Lab A03L	Th	1:20 – 4:20	HS 167	Bosma
Disc A03D	Th	8:30 – 9:30	HS 456	Kurtz

Required Textbook & Materials:

- REQUIRED: Hill, R. W., G. A. Wyse, and M. Anderson. 2012. *Animal Physiology*, 3rd Edition. Sinauer Associates. Sunderland, MA.
- REQUIRED: Kurtz, C., Cooper, S., and Merriman, D. 2014. *Biology 319/519: General Animal Physiology Lab Manual*. UW-Oshkosh.
- REQUIRED: Lab notebook (sold at UW-Oshkosh bookstore and other places). Please feel free to use a blank section of a previous notebook to save paper!
- REQUIRED: Calculator

E-mail Correspondance & D2L: E-mail communication and D2L will be used frequently throughout the semester to communicate between instructors and students. E-mails constitute legal, official University communication. **You are responsible for checking your e-mail and D2L on a regular basis.** Not checking your e-mail is not an excuse for performance problems in the class. Contact Academic Computing for assistance with email and D2L.

Course Objectives: This course is designed so that the student will achieve a general understanding of animal physiology. This objective requires a synthesis of several areas within physiology (respiration, circulation, digestion, energy metabolism, etc.) as they apply to an animal's ability to maintain homeostasis. Physiological topics will be examined from a comparative and integrative perspective rather than just studying mammalian physiological systems. The comparative nature of this course is important since students in the course are preparing for several types of future careers. For example, this course is taken by pre-med, pre-vet, pre-graduate school and graduate students. However, common functional pathways will be emphasized, thus integrating the information. The laboratory portion of this course will emphasize introductory exercises, experimental techniques, proper record-keeping, animal surgery and data collection of physiological variables.

Attendance Policy:

- **LECTURE:** I will not take attendance in lecture. Attending lecture and taking good notes will increase your ability to do well in class. Lectures will be accompanied by PowerPoint slides and will be podcast. ***In addition, lectures will sometimes include short group activities that will earn points for all students in attendance. If you miss one of these group activities for any reason, you will not be able to make it up.*** Abridged versions of lecture slides will be posted on D2L prior to lecture. These PowerPoint presentations will be missing vital information that you will want to fill in as we go along. In addition, I may discuss topics not addressed in the PowerPoint slides. Remember, podcasts sometimes fail – **DO NOT RELY ON THEM INSTEAD OF ATTENDING LECTURE!** If you miss a lecture, it is in your best interest to get notes from a classmate. **Anything that is discussed in class may be covered on an exam whether it is presented on the lecture slides or not!**
- **LAB:** You should plan on lab taking the full 3 hours each week. Do not register for this course if you have a class or work conflict with lab. Lab exercises have been designed to supplement and reinforce concepts taught in lecture. You are expected to attend every laboratory session and stay until your group's tasks are completed. Attendance will be taken. **An unexcused absence from lab will lead to a "0" on that week's lab quiz with no chance to make it up. If no quiz is scheduled on the day of an unexcused absence, 5 pt will be deducted from the next lab quiz or the student will receive a "0" on the next quiz (whichever is greater).**

Mr. Bosma has full discretion for grading lab quizzes and determination of grades for his section. ***Do not come to me if you have a question about a grade that Mr. Bosma has given you. I will defer to his judgment for his lab section.***

Small numbers of live animals will be used in this course. All government-imposed humane procedures will be followed. If you object to animal use in experiments, you may not enjoy the work required to pass this class.

- **DISCUSSION:** You are expected to attend every discussion section. Attendance will be taken. Discussion sections will be used to discuss topics related to lecture in further detail, for planning of lab group experiments and for discussion of primary literature. This will involve preparatory work outside the classroom including reading primary literature from scientific journals and further reading in the textbook. **Come prepared to participate in discussion each week!** Participation will be part of your grade. Each student will start with 50 participation points. Failure to significantly participate in discussion within your group or with the whole class during a single class period will result in the loss of 10 points. Minimal participation will result in the loss of 5 points. Dr. Kurtz will discuss what is considered significant participation in week 1. Separate participation & attendance grades will be given for discussion. **One unexcused absence from discussion will lead to a loss of ½ of the attendance points. A second unexcused absence will lead to the loss of the remaining attendance points.**

Students with Disabilities: Students with disabilities are welcome in this course. Please contact your lecture instructor **in the first week of class** so that we can discuss necessary accommodations.

Academic Honesty Policies: Policies are clearly defined at this institution and will be followed. Students are referred to the University of Wisconsin-Oshkosh Student Discipline Code as detailed in specific provisions of Chapter 14 of the State of Wisconsin Administrative Code. Any student(s) found in violation of any aspect of the above Code will receive a sanction as detailed in UWS 14.05 and 14.06. Examples of violations include: looking at another student's

exam or answer sheet and copying the answers during an exam, talking or whispering to another student during an exam, receiving text messages during an exam on an electronic device or listening to answers or information recorded on an electronic device via earphones during an exam. Cheating on an exam (including looking at someone else's paper) at a MINIMUM leads to zero on that exam, with no opportunity for a make-up or extra credit. A second offense is an F in the course and a report to Dean of Students.

Lecture Exam Policy: Exams will be given in discussion section on the assigned dates (see schedule below). **Exams will test material covered in lecture and discussion, but not lab.** Exams will be handed out at the start of the class period after I am satisfied with seating arrangements and the room is quiet. Exams are closed book and closed notes. Students will have the full hour to complete the exam, but NO LATER. You **MUST** be present for **EVERY** scheduled exam!! Make-up exams will be available **only** if the student suffers a **life-threatening** illness or death of a loved one and has a medical excuse or documentation (e.g., obituary) to support that claim. If you cannot be present for an exam, it is **your** responsibility to get in touch with me **before** the rest of the class takes the exam. If you need to make up an exam due to an excused absence, a make-up exam is scheduled for *Wednesday, May 14 at 3 p.m. in HS 167.* ***If you miss an exam and the above conditions are not met, you will receive a zero for that exam.***

Lecture Online Quiz Policy: In addition to in-class, closed-book, closed-note exams, there will be four online (D2L), open-book, open-note quizzes. These quizzes will contain multiple-choice, fill-in-the-blank(s) and/or true-and-false questions and will be **TIMED** (40-50 minutes). Although they are technically open-note and open-book, you will not have time to dig through your notes to find an answer for each question. As such, you should study your notes **before** beginning the online quiz. You will only have one opportunity to complete the quiz and will not be allowed to answer questions once your time has run out. Online quizzes will open at 4:30 p.m. on Wednesday and **close at 11:59 p.m. on the following Monday.** ***With D2L quizzes, it is important that you save your answers after every question! If you have not saved your answers and time runs out, you will not get credit for those answers.*** There will be **NO** make-up for online quizzes. If you fail to take an online quiz before the deadline for **ANY REASON**, you will receive a 0 for that quiz. **There are NO EXCEPTIONS to this rule.**

Lab Quiz Policy: There are 10 scheduled lab quizzes throughout the semester. Lab quizzes will cover material from the previous lab and will be worth 10 points each. Students who miss a lab or show up late for lab due to an unexcused absence WILL NOT BE ALLOWED TO MAKE UP THE QUIZ! **There are NO EXCEPTIONS to this rule.**

Lab Group Experiments: At two points during the semester, student lab groups will design, implement, assess and present their own experiments. Groups will have time in discussion and/or lab to come up with their hypothesis and experimental plan and to carry out the experiments. There may be additional time (depending on the group's efficiency) to analyze the data, but much of this will need to be done outside of class. As part of the grading for these activities, the student group will present their experimental plan and results to their lab section. Students are expected to keep a lab notebook as a record of all lab group experiments (Dr. Kurtz will hand out an organizational rubric to follow for lab notebooks). Lab notebooks will be collected on the day of group experiment presentations. Lab notebooks will be graded separately from presentations (see "Grading" section below). At the end of the experiment, each group member will receive a participation grade from the other members of his/her group.

For Graduate Students Taking Biology 519: Graduate students will have the following additional objectives & activities in order to receive graduate credit for General Animal Physiology.
Note: A grade of less than a C is a failing grade for graduate students.

Objectives:

1. Graduate students will be expected to demonstrate a greater depth of knowledge of the material compared to undergraduate students.
2. Graduate students will be expected to demonstrate a higher level of synthesis than undergraduate students.
3. Graduate students will be expected to demonstrate a more sophisticated level of communication than undergraduates.

In order to meet the graduate objectives, graduate students will have to:

1. Demonstrate significant leadership by full participation in every topic discussion. Unlike undergraduate students, there will be no points for minimal discussion participation. If a graduate student does not fully participate in a discussion, he/she will lose 10 points.
2. Lead one current paper discussion or case study in their discussion section. The graduate student will choose the paper or case study with the help of Dr. Kurtz and lead the discussion in their section. The paper must be approved by Dr. Kurtz at least 2 weeks before the proposed discussion so that it can be distributed to the class in a timely manner. The student will be graded on his/her preparedness, understanding of the paper and ability to answer questions about the paper. This activity will take the place of the 5% attendance portion of the discussion grade (as graduate students are required to attend all discussions and will lose all participation points if they fail to attend).

Common Courtesy: Ringing cellular phones are a distraction to the instructor and others in the class. Turn off all phones, tablets and other devices before class and keep them in your backpack or purse until class is finished. **NO electronic devices (other than a calculator) will be allowed out during an exam!**

Suggestions for Success:

- In order to do well in this course, expect to spend 2-3 hours studying per 1 lecture hour as you would in all of your college courses.
- Use written rehearsal to study. A good way to do this is to first look over one section or day of notes, put them away and then write down what you remember. Start out by writing main themes and terms in outline or flowchart format. Then go back to your notes and see what you did not remember. Then go back and write more detail into your outline or flowchart until you have gotten down the material.
- Study for 20 minutes and then take a 5 minute break. After the 5 minute break continue this 20/5 minute pattern.
- Be prepared to ask questions in class and in discussion. If you have questions over the material that you have studied, bring them to class and ask them.
- Take your time on exams. Slow down and read each question carefully.
- If you don't know the answer to a question, skip the question until the end of the test.
- On multiple choice questions, cover the possible answers with your hand and read the question. Give yourself time to come up with an answer. Look for an answer that matches your idea from the possible choices listed.
- Study for online quizzes and lab quizzes and keep a good lab notebook! This will help offset any points you may lose on a lecture exam.

Grading: Grades will be posted on D2L throughout the semester. Lab/discussion grades will be posted to the main D2L site. Due to privacy concerns, I will NOT give grades out over the phone or reveal grades in phone messages.

Grades will be based on the following:

Lecture (50% of overall grade):

Exams (4)	30%
Group Activities (lecture & discussion)	10%
Online Quizzes (4)	10%

Lab (35% of overall grade):

Quizzes (10)	15%
Group Experiment presentations (2)	10%
Lab notebook grades (2)	5%
Group Member Peer Grading (2)	5%

Discussion (15% of overall grade):

Attendance*	5%
Participation	10%

Total:

 100%

*Graduate students enrolled in BIO 519 will not have Attendance points for discussion. This portion of the grade will apply to their grade for leading a discussion of a primary literature article.

The grading scale is:

93-100%	A
90-92%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
73-76%	C
70-72%	C-
67-69%	D+
63-66%	D
60-62%	D-
< 60	F

***** Final grades will be rounded up to the nearest percentage point in order to assign letter grades!!!**

Tentative Outline: This schedule is intended as a basic outline of the course lectures. Extenuating circumstances may require a deviation from this schedule. I will inform the class ahead of time if this is the case.

Date	Lecture Topic	Text Ch.	Online Quiz	Date	Lab Topic	Lab Quiz	Date	Discussion Topic (Reading)
2/3 2/5	Physiological Fundamentals Nutrition & Digestion	1 1,6		2/4 2/6	Histology & Rat Anatomy	---	2/6	Discussion Intro & Ringer's Soln Preparation
2/10 2/12	Nutrition & Digestion Energy Metabolism	6 6,7,8,9	#1 up	2/11 2/13	Na ⁺ /Glucose Co-port	1	2/13	The Microbiome (pp. 143-147; paper)
2/17 2/19	Energy Metabolism Energy Metab./Thermoreg.	7,8,9 7,8,9,10	#1 due	2/18 2/20	Metabolic Rate & Body Size	2	2/20	Metabolism Math
2/24 2/26	Exam Review /Thermoreg. Thermoregulation	10,11 10,11		2/25 2/27	Principals of Exper. & iWorx Tutorial	3	2/27	Exam 1
3/3 3/5	Thermoregulation Neural/Endocrine Control	10,11 10,11,15	#2 up	3/4 3/6	Physiology of Excitable Cells; Start planning Expt. 1	E.C.	3/6	Hibernation & torpor (pp. 265-290); Thermoregul. Math; Plan Expt. 1
3/10 3/12	Neural/Endo Ctrl; Nerves Nerves & Synapses	15,12 12,13	#2 due	3/11 3/13	Group Experiment 1	4	3/13	Finish Nerves & Synapses Membrane Math
3/17 3/19	Exam Review /Sensory Proc. Sensory Processes	14 14		3/18 3/20	Hematology	No Quiz	3/20	Exam 2
3/24 3/26	SPRING BREAK SPRING BREAK				NO LAB THIS WEEK			NO DISCUSSION THIS WEEK
3/31 4/2	Endocrinology Endocrinology	16 16,17	#3 up	4/1 4/3	Blood Typing Present Expt. 1*	5	4/3	Immunology (NIB)
4/7 4/9	Muscle & Movement Muscle & Movement	19-21 19-21	#3 due	4/8 4/10	Skeletal Muscle Properties	6	4/10	Animal Navigation (Ch. 18 & paper)
4/14 4/16	Exam Review /Respiration Respiration	22-24 22-24		4/15 4/17	Respiratory System Capacities & Control	7	4/17	Exam 3
4/21 4/23	Respiration Circulation	22-24 25		4/22 4/24	Blood Pressure, Heart Rate & Pig Plucks	8	4/24	Diving Mammals (Ch. 26); Plan Expt. 2
4/28 4/30	Circulation Osmoregulation	27-29	#4 up	4/29 5/1	Group Experiment 2	9	5/1	"Water Can Kill?" Case Study
5/5 5/7	Osmoregulation Osmoregulation	27-29 27-29	#4 due	5/6 5/8	Urinalysis Present Expt. 2*	No Quiz	5/8	Mammals in Dry Environ. (Ch. 30 & paper)
5/12 5/14	Lab Quiz #10, Exam Review <i>Make-Up Exam</i>				NO LAB THIS WEEK		5/15	Exam 4

* **Lab notebooks due at the beginning of class.**