

## BIO 519 A09C ANIMAL PHYSIOLOGY SPRING 2011 COURSE SYLLABUS

Instructor: Dr. Courtney Kurtz  
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Office Hours: M – 2-3  
W – 11:30-12:30  
Also by appointment, as needed

Other Lab Instructor: Dr. Margaret Beard  
Office: HS 161  
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Timetable:

Lecture	M W F	10:20 – 11:20	AC 149	Kurtz
Lab A01L	T	9:40-12:40	HS 167	Kurtz
Disc A01D	Th	9:40 – 10:40	HS 237	Kurtz
Lab A02L	T	1:20 – 4:20	HS 167	Kurtz
Disc A02D	Th	11:30 – 12:30	HS 457	Kurtz
Lab A03L	Th	1:20 – 4:20	HS 167	Beard
Disc A03D	Th	8:00 – 9:00	HS 237	Kurtz

Required Textbook & Materials:

- REQUIRED: Hill, R. W., G. A. Wyse, and M. Anderson. 2008. *Animal Physiology*, 2ND Edition. Sinauer Associates. Sunderland, MA.
- REQUIRED: Cooper, S. J., and Vaughan, D.K. 2010. *Biology 319/519: General Animal Physiology Lab Manual*. UW-Oshkosh.
- REQUIRED: College-ruled 80-page composition lab notebook (sold at UW-Oshkosh bookstore and other places)
- 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, animal surgery, and data collection of physiological variables.

## Attendance Policy:

- **LECTURE:** I will not take role in lecture. Attending lecture and good note-taking skills will increase your ability to do well in class. Lectures will be accompanied by PowerPoint slides and will be podcast. 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/or 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. A portion of your laboratory grade is based on your attendance and participation (see "Grading" below). **One unexcused absence from lab will lead to a loss of ½ of the participation/attendance points. Two unexcused absences will lead to the loss of the remaining participation/attendance points.** Dr. Beard has full discretion for grading lab quizzes and determination of participation/absence grades for her section. ***Do not come to me if you have a question about a grade that Dr. Beard has given you. I will defer to her judgment for her lab section.***

Small numbers of 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. This may include reading primary literature from scientific journals or further reading in the textbook. **Come prepared to participate in the discussion of the scheduled topic!** Participation will be part of your grade! In addition, lecture exams will be given in discussion sections as well as random lecture quizzes. If you miss a quiz or exam due to an unexcused absence in discussion, you will not be allowed to make up that quiz/exam. Participation/attendance grades will be given for discussion as well. **One unexcused absence from discussion will lead to a loss of ½ of the participation/attendance points. Two unexcused absences will lead to the loss of the remaining participation/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 be testing 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 of lecture 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 *Friday, May 13 at 10:20 a.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 Pop-Quiz Policy: Pop-quizzes will be given during discussion or lecture sections randomly and unannounced throughout the semester. Pop-quizzes are closed-book and closed-note and will always be given at the beginning of the discussion section. Students who miss a discussion section due to an unexcused absence and students who show up late for discussion on the day of a pop-quiz WILL NOT BE ALLOWED TO MAKE UP THE QUIZ! **There are NO EXCEPTIONS to this rule.**

Lecture Online Quiz Policy: In addition to in-class, closed-book, closed-note exams and quizzes, there will be four online (D2L), open-book, open-note quizzes. These quizzes will be short, multiple-choice, fill-in-the-blank(s) or true-and-false and **TIMED** (20 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. ***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 online quizzes. If you fail to take an online quiz before the deadline for **ANY REASON**, you will receive a 0 for that quiz.

Lab Quiz Policy: There are 12 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 Notebooks: A portion of your grade will depend upon a laboratory notebook, which is a running record of your work in the lab. The notebook does not need to contain all the procedures performed in the lab since the procedures are already written in the lab manual. However, the notebook does need to contain enough information to identify the portion of the lab to which the data recorded pertain. When appropriate, include computer generated data graphs or worksheet data and paste the data directly into your lab notebook. If questions are asked in the text of the lab, be sure to write down answers in your lab notebook. More specific instructions will be given in lab.

Keeping good lab notebooks is not just another way to grade students. Lab notebooks are now a legal necessity in the world of research. With the freedom of information act passed by

Congress, your lab data can now be “borrowed” by other scientists interested in your research. Recently, lack of notebook support for published research data has led to career-ending charges of data fraud for several scientific researchers.

**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.

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, they will have to submit a written paper with at least 3 outside references by May 6, 2011. The topic for the paper will be chosen by the instructor and assigned on or around March 28, 2011. The paper will be worth 100 points. The point total for graduate students (BIO 519) will therefore be higher than BIO 319, but the grades will be based on the same percentage system (grading scale). In addition, a grade of less than a C is a failing grade for graduate students.

**Common Courtesy:** Ringing cellular phones are a distraction to the instructor and others in the class. Turn off all cell phones, pagers and MP3 players before class. Keep them in your backpack or purse until class is finished. **NO cell phones, PDAs, headphones or other electronic devices 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.
- Short-answer or essay questions generally require definition of terms, explanation of terms, and/or examples that illustrate your knowledge of the subject in regards to the question.

Grading: Grades will be posted on D2L throughout the semester. Lab/discussion grades will be posted to the main D2L site (with the exception of Dr. Beards lab section). 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:*

Exams	400 pts (100 pts each)
Pop-Quizzes	30 pts
Online Quizzes	100 pts (25 pts each)

*Lab:*

Quizzes	120 pts (10 pts each)
Lab Notebooks	30 pts
Attendance/Participation	50 pts

*Discussion:*

Attendance/Participation	50 pts
Presentations	20 pts

**Total Points Possible:** 800 pts

\*\* Graduate students enrolled in BIO 519 will have an additional written assignment worth 100 pts for a total of 900 pts.

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 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)
1/31 2/2 2/4	Introduction Physiological Fundamentals Physiological Fundamentals	1,2,4 1,2,4 1,2,4		2/1 2/3	Histology & Rat Anatomy	---	2/3	Discussion Introduction & Ringer's Solution Preparation
2/7 2/9 2/11	Nutrition & Digestion Nutrition & Digestion Nutrition & Digestion	5 5 5	#1 up	2/8 2/10	Na <sup>+</sup> /Glucose Co-port	1	2/10	The Microbiome of Animals (pp. 125-129)
2/14 2/16 2/18	Energy Metabolism Energy Metabolism Energy Metabolism	6,7,8 6,7,8 6,7,8	#1 due	2/15 2/17	Experimental Principles & iWorx Tutorial	2	<b>2/17</b>	<b>Exam 1 Review</b>
2/21 2/23 2/25	Energy Metabolism Thermoregulation Thermoregulation	6,7,8 9 9		2/22 2/24	Metabolic Rate & Body Size	E.C.	<b>2/24</b>	<b>Exam 1</b>
2/28 3/2 3/4	Thermoregulation Thermoregulation Neural/Endocrine Control	9,10 9,10 14	#2 up	3/1 3/3	Vertebrate Thermoregulation	3	3/3	Hibernation, estivation & torpor (pp. 243-245; pp. 261-267)
3/7 3/9 3/11	Neural/Endocrine Control Nerves & Synapses Nerves & Synapses	14 11,12 11,12	#2 due	3/8 3/10	Physiology of Excitable Cells	4	<b>3/10</b>	<b>Exam 2 Review</b>
3/14 3/16 3/18	Nerves & Synapses Sensory Processes Sensory Processes	11,12 13 13		3/15 3/17	Cardiac Dynamics	5	<b>3/17</b>	<b>Exam 2</b>
<b>3/21</b> <b>3/23</b> <b>3/25</b>	<b>SPRING BREAK</b> <b>SPRING BREAK</b> <b>SPRING BREAK</b>				<b>NO LAB THIS WEEK</b>			<b>NO DISCUSSION THIS WEEK</b>
3/28 3/30 4/1	Endocrinology Endocrinology Endocrinology	15 15 15,16		3/29 3/31	Skeletal Muscle Properties	6	3/31	Animal Navigation (Ch. 17)
4/4 4/6 4/8	Muscle & Movement Muscle & Movement Muscle & Movement	18,19 18,19 18,19	#3 up	4/5 4/7	Respiratory System Capacities & Control	7	4/7	Muscle Plasticity (Ch. 20)
4/11 4/13 4/15	Respiration Respiration Respiration	21-23 21-23 21-23	#3 due	4/12 4/14	Hematology	8	<b>4/14</b>	<b>Exam 3 Review</b>

4/18	Circulation	24		4/19	Blood Pressure, Heart Rate & Pig Plucks	9	<b>4/21</b>	<b>Exam 3</b>
4/20	Circulation	24		4/21				
4/22	Circulation	24						
4/25	Immunology	NIB		4/26	Urinalysis	10	4/28	Diving Mammals (Ch. 25)
4/27	Immunology	NIB		4/28				
4/29	Osmoregulation	26-28	#4 up					
5/2	Osmoregulation	26-28	#4 due	5/3	Blood Typing	11	5/5	Mammals in Dry Environments (Ch. 29)
5/4	Osmoregulation	26-28		5/5				
5/6	Osmoregulation	26-28						
<b>5/9</b>	<b>Lab Quiz #12, Exam 4 Review</b>				<b>NO LAB THIS WEEK</b>		<b>5/12</b>	<b>Exam 4</b>
5/11	NO LECTURE							
5/13	Make-Up Exam							