

**BIO 319/519 A09C ANIMAL PHYSIOLOGY
SPRING 2013 COURSE SYLLABUS**

Instructor: Dr. Courtney Kurtz
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Office Hours: M – 10-11 a.m.
Th – 1-2 p.m.
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	8:00 – 9:00	HS 237	Kurtz

Required Textbook & Materials:

- REQUIRED: Hill, R. W., G. A. Wyse, and M. Anderson. 2012. *Animal Physiology*, 3rd Edition. Sinauer Associates. Sunderland, MA.
- REQUIRED: Cooper, S. J., and Vaughan, D.K. 2013. *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, proper record-keeping, animal surgery and data collection of physiological variables.

Attendance Policy:

- **LECTURE:** I will not take role 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. 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. A second unexcused absence will lead to the loss of the remaining participation/attendance points.** Mr. Bosma has full discretion for grading lab quizzes and determination of participation/absence 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 and for presentation and discussion of primary literature. This will include reading primary literature from scientific journals and further reading in the textbook and discussion with the class. **Come prepared to participate in the discussion of the scheduled topic!** Participation will be part of your grade. Each student will start with 50 participation points. Failure to significantly participate in discussion 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. In addition, lecture exams will be given in discussion sections. If you miss an exam due to an unexcused absence in discussion, you will not be allowed to make up that exam. 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 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 *Wednesday, May 8 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 Pop-Quiz Policy: Pop-quizzes will be given during lecture randomly and unannounced throughout the semester. Pop-quizzes are closed-book and closed-note. Students who miss a pop quiz due to an unexcused absence and students who show up late on the day of a pop-quiz and miss the 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 multiple-choice, fill-in-the-blank(s) or true-and-false and **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 online quizzes. If you fail to take an online quiz before the deadline for **ANY REASON**, you will receive a 0 for that quiz.

Discussion Online Quiz Policy: Material covered in topic-based Discussion sessions will be the subject of a short (10 pt) online quiz. These quizzes will be multiple-choice or true-and-false and **TIMED** (15-20 minutes). Discussion quizzes will open at 1 p.m. on the Thursday of the discussion and remain **available until 11:59 p.m. on the Sunday** after the discussion. 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 11 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: Students are expected to keep a lab notebook as a record of all lab activities. Dr. Kurtz will hand out an organizational rubric for students to follow. Lab notebooks will be collected twice during the semester – at an unannounced time during the semester and at the end of the semester. Each lab notebook grading will be worth 50 points.

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, 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 subject discussion, he/she will lose 10 points.
2. Lead one current paper discussion in their discussion section. The graduate student will choose the paper from the primary literature with the help of Dr. Kurtz and lead the discussion of the paper 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 be worth 50 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 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.
- 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 or pop quiz.

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:

Exams	400 pts
Pop-Quizzes	30 pts
Online Quizzes	100 pts

Lab:

Quizzes	110 pts
Lab notebooks	100 pts
Attendance/Participation	50 pts

Discussion:

Online Quizzes	50 pts
Attendance	30 pts
Participation	50 pts

Total Points Possible: 920 pts

** Graduate students enrolled in BIO 519 will have an additional discussion presentation worth a total of 50 pts for a grand total of 970 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 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)
1/28 1/30	Physiological Fundamentals Phys. Fund., Nutr. & Digestion	1 1,6		1/29 1/31	Histology & Rat Anatomy	---	1/31	Discussion Intro & Ringer's Soln Prep.
2/4 2/6	Nutrition & Digestion Nutr. & Dig., Energy Metab.	6 6,7,8,9	#1 up	2/5 2/7	Na ⁺ /Glucose Co-port	1	2/7	The Microbiome (pp. 143-147; paper)
2/11 2/13	Energy Metabolism Energy Metabolism	7,8,9 7,8,9	#1 due	2/12 2/14	Experimental Prin. & iWorx Tutorial	2	2/14	Finish Energy Metab. Lect.; Metabolism Math
2/18 2/20	Exam Review/Thermoreg. Thermoregulation	10,11 10,11		2/19 2/21	Metabolic Rate & Body Size	E.C.	2/21	Exam 1
2/25 2/27	Thermoregulation Thermoreg.; Neural/Endo Ctrl	10,11 10,11,15	#2 up	2/26 2/28	Vertebrate Thermoregulation	3	2/28	Hibernation & torpor (pp. 265-267, 285-290; paper)
3/4 3/6	Neural/Endo Ctrl; Nerves Nerves & Synapses	15,12 12,13	#2 due	3/5 3/7	Hematology	4	3/7	Finish Nerves & Synapses lectures; Membrane Math
3/11 3/13	Exam Review/Sensory Proc. Sensory Processes	14 14		3/12 3/14	Physiology of Excitable Cells	5	3/14	Exam 2
3/18 3/20	SPRING BREAK SPRING BREAK				NO LAB THIS WEEK			NO DISCUSSION THIS WEEK
3/25 3/27	Endocrinology Endocrinology	16 16,17		3/26 3/28	Cardiac Dynamics	6	3/28	Animal Navigation (Ch. 18 & paper)
4/1 4/3	Muscle & Movement Muscle & Movement	19-21 19-21	#3 up	4/2 4/4	Skeletal Muscle Properties	7	4/4	Immunology (NIB)
4/8 4/10	Exam Review/Respiration Respiration	22-24 22-24	#3 due	4/9 4/11	Respiratory System Capacities & Control	8	4/11	Exam 3
4/15 4/17	Respiration Circulation	22-24 25		4/16 4/18	Blood Pressure, Heart Rate & Pig Plucks	9	4/18	Circulation (Ch. 25)
4/22 4/24	NO CLASS Osmoregulation		#4 up	4/23 4/25	NO LAB THIS WEEK		4/25	Diving Mammals (Ch. 26 & paper)
4/29 5/1	Osmoregulation Osmoregulation	27-29 27-29	#4 due	4/30 5/2	Blood Typing & Urinalysis	10	5/2	Mammals in Dry Environ. (Ch. 30 & paper)
5/6 5/8	Lab Quiz #11, Exam Review* <i>Make-Up Exam</i>				NO LAB THIS WEEK		5/9	Exam 4

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