

**BIO 319 A09C ANIMAL PHYSIOLOGY (5 cr.)
SPRING 2017 COURSE SYLLABUS**

Instructor: Dr. Courtney Kurtz
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Office Hours: M 9:10-10:40 am; W 12:20-1:50 pm
Also by appointment, as needed



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	F	12:40 – 3:40	HS 167	Bosma
Disc A03D	Th	8:30 – 9:30	HS 237	Kurtz

Required Textbook & Materials:

- REQUIRED: Hill, R. W., G. A. Wyse, and M. Anderson. 2016. *Animal Physiology*, 4th Edition. Sinauer Associates. Sunderland, MA. (3rd edition is fine as well, although some figure numbers may be incorrect)
- REQUIRED: Kurtz, C., Cooper, S., and Merriman, D. 2017. *Biology 319/519: General Animal Physiology Lab Manual*. UW-Oshkosh.
- REQUIRED: USB drive (at least 500 MB) for lab data
- REQUIRED: Calculator with log function (not cell phone)

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. By the end of the semester, students will have:

- A thorough understanding of the concept of homeostasis and how an animal's body works to maintain it.
- An understanding of the synthesis of several areas within physiology (respiration, circulation, digestion, energy metabolism, etc.) as they apply to an animal's ability to maintain homeostasis.
- A knowledge of physiological topics from a comparative and integrative perspective.
- A comprehensive knowledge of functional physiological pathways common to all animals.
- A confidence in applying what they have learned to real-life situations obtained by examining case studies and primary literature.
- Skills in using experimental techniques and physiological equipment to collect data, proper record-keeping and data analysis and effective presentation of results to others via written and oral presentations.
- A better understanding of a multi-system complex disease (***metabolic syndrome***) and its effects on multiple physiological systems.

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 unannounced 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. If you are horribly sick or will miss a lecture for any reason, please contact me prior to the beginning of the lecture to be considered for an excused absence and not lose points for a group activity. 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).** If you are going to miss your normal lab session, you can attend another lab session with permission of the instructor, but there will be no make-up labs beyond the scheduled sessions. 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 material will be on lecture exams!** Discussion sections will be used to discuss topics related to lecture in further detail, for group work on case studies and problems 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 100 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. For each unexcused absence from discussion the student will lose 10 participation points. If you are going to miss your scheduled discussion session, you can attend another discussion session **with permission of your instructor.**

Students with Disabilities: Students with disabilities are welcome in this course. Please contact Dr. Kurtz **during 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, quiz or answer sheet and copying the answers during an exam/quiz, talking or whispering to another student during an exam/quiz, bringing prohibited notes sheets to an exam/quiz and attempting to use them as an aid for that exam/quiz, receiving text messages during an exam/quiz on an electronic device or listening to answers or information recorded on an electronic device via earphones during an exam/quiz. Violation of the discipline code at a MINIMUM leads to zero on that exam, quiz or assignment with no opportunity for a make-up or extra credit. The Dean of Students office will be notified in accordance with University policy. A second offense will result in an F in the course and a formal report to the Dean of Students.

Lecture Exam Policy: Exams will be given in discussion section on the assigned dates (see schedule below). **Exams will cover material from lecture and discussion, but not lab.** Exams will be handed out at the start of the class period after Dr. Kurtz is satisfied with seating arrangements and the room is quiet. Exams are closed book and closed notes. Students will have the full class time to complete the exam, but NO LATER. You **MUST** be present for **EVERY** scheduled exam!!

Exam Make-Up Policy: If you know ahead of time that you will miss a scheduled exam for a University-approved function or event (e.g., athletic event, national guard duty), it is your responsibility to contact Dr. Kurtz with documentation and schedule a time to take the exam. In order to expedite grading and the return of exams to the class, **you must take your exam before your absence begins** (and before the rest of the class takes the exam). Contact Dr. Kurtz as soon as your absence is known to schedule your make-up exam. If you miss an exam due to serious illness or emergency (family, health or otherwise), you must provide documentation (e.g., a medical excuse, obituary, tow truck receipt) to support that claim. You must contact Dr. Kurtz **before** the rest of the class takes the exam and you will be expected to take the exam by the end of the day Friday (the day after the scheduled exam). If you cannot make up the exam in this timeframe, a comprehensive make-up essay exam is scheduled for *Wednesday, May 10 at 3 p.m. in HS 167.*

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. Questions for online quizzes will be randomly selected for each student from a question bank so no two students will take the same quiz. These quizzes will contain multiple-choice, matching, 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 each 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 11 scheduled lab quizzes throughout the semester. At the end of the semester, the **lowest lab quiz score for each student will be dropped** from final grade calculations. 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, analyze 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. In addition, each individual student will write and submit a report of their group's findings. The reports will include introduction, methods, results and discussion sections. Dr. Kurtz will post a rubric to follow for these reports. These reports will be due the night before the group presentation (at 11:59 pm) and will be submitted through D2L Dropbox. Reports will be graded separately from presentations (see "Grading" section below).

Common Courtesy: Ringing cellular phones are a distraction to the instructor and others in the class. In addition, checking your email, text and other communications on your phone during class is distracting to your instructor (yes, I can see you!) and your peers. 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 a quiz or 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.
- Physiology is a complex topic and each subject connects to at least one other in some way. While you read through your notes, make notes of these connections.
- While you read through your notes, write yourself questions on a separate sheet of paper. Later, without your notes, try to answer the questions you have written for yourself. This can also be helpful when studying with others in the class (have each person write questions and bring them to your group study session).
- Use concept maps to sort out different terms, concepts and pathways. For example, use blank pieces of paper and label them with different broad concepts (e.g., "homeotherm" and "poikilotherm" or "artery" and "vein"). Write details and pathways on index cards and sort them into the appropriate concept category. These cards can be used over and over as you study for the exam.
- 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.
- Study for online quizzes and lab quizzes, attend all lectures and discussions! 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:

Exams (4)	35%
Lecture Group Activities	10%
Online Quizzes (4)	10%
Lab Quizzes (10)	15%
Group Experiment Presentations (2)	10%
Group Experiment Reports (2)	10%
Discussion Participation	10%
Total:	100%

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)
1/30 2/1	Physiological Fundamentals Nutrition & Digestion	1 1,6		1/31 2/3	Histology & Rat Anatomy	---	2/2	Intro to Obesity & Metabolic Syndrome
2/6 2/8	Nutrition & Digestion Energy Metabolism	6 7,8,9	#1 up	2/7 2/10	Sugar & Disease ("Fed Up")	1	2/9	The Microbiome (pp. 147-151; paper)
2/13 2/15	Energy Metabolism Energy Metab./Thermoreg.	7,8,9 7,8,9,10	#1 due	2/14 2/17	Metabolic Rate & Body Size	2	2/16	Metabolism Math
2/20 2/22	Exam Review/Thermoreg. Thermoregulation	10,11 10,11		2/21 2/24	Principals of Exper. & iWorx Tutorial	3	2/23	Exam 1
2/27 3/1	Thermoregulation Neural/Endocrine Control	10,11 15	#2 up	2/28 3/3	Physiology of Excitable Cells	4	3/2	Hibernation & torpor (p. 295-301); Thermo. Math
3/6 3/8	Neural/Endo Ctrl; Nerves Nerves & Synapses	15,12 12,13	#2 due	3/7 3/10	Group Experiment 1	5	3/9	Finish Nerves; Membrane Math (pp. 315-319)
3/13 3/15	Exam Review/Sensory Proc. Sensory Processes	14 14		3/14 3/17	Hematology	No Quiz	3/16	Exam 2
3/20 3/22	SPRING BREAK SPRING BREAK				NO LAB THIS WEEK			NO DISCUSSION THIS WEEK
3/27 3/29	Endocrinology Endocrinology	16 16,17	#3 up	3/28 3/31	Blood Typing Present Expt. 1*	6	3/30	Immunology (NIB)
4/3 4/5	Muscle & Movement Muscle & Movement	19-21 19-21	#3 due	4/4 4/7	Skeletal Muscle Properties	7	4/6	Animal Navigation (Ch. 18, paper)
4/10 4/12	Exam Review/Respiration Respiration	22-24 22-24		4/11 4/14	Respiratory System Capacities & Control	8	4/13	Exam 3
4/17 4/19	Respiration Circulation	22-24 25		4/18 4/21	Blood Press., Heart Rate & Pig Plucks	9	4/20	Diving Mammals (Ch. 26, paper)
4/24 4/26	Circulation Osmoregulation	25 27-29	#4 up	4/25 4/28	Group Experiment 2	10	4/27	Discussion of O/MS paper or case study
5/1 5/3	Osmoregulation Osmoregulation	27-29 27-29	#4 due	5/2 5/5	Present Expt. 2* Urinalysis	No Quiz	5/4	Mammals in Dry Environ. (Ch. 30, paper)
5/8 5/10	Quiz 11/Exam Rev. <i>Make-Up Exam</i>			5/9 5/12	NO LAB THIS WEEK		5/11	Exam 4

* **Group project reports due 11:59 p.m. the night prior to presentation.**