

Zoology 4230: Animal Physiology

Spring 2016; section 001

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Office Hours: MW 10-11:00

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Lecture: TR 8:00-8:50, N229

Lab: TR 9:00-11:50, N229

Prerequisites: BIOL 3310 and CHEM 3010, CHEM 3012, or equivalents.

Required Materials:

Moyes and Schulte, Principles of Animal Physiology, 2nd Edition. ISBN#: 9780321501554

Recommended Materials:

Dissection Kit, Lab Coat, nitrile gloves, USB drive

Attendance: Students are expected to attend all lectures and lab sessions. Please arrive in a timely manner. Missing a lab that involves live animal work without prior permission or a serious and compelling (and documented) excuse will result in a 5% total grade decrease for each instance. If any labs are missed, the points earned by your lab mates will not be awarded.

**Missing class during week one will result in your being dropped from the course to make room for anyone on the waiting list that is present.

Blackboard: We will use Blackboard heavily in this course, if you are not experienced with this site, please take some time to familiarize yourself with how it functions.

- 1) Lab Safety Course: You will be assigned the BioLab safety course on Blackboard (2015-2016-BioLabSafety: BioLabSafety). **If this is on your course list, it must be completed with a 100% score by February 5th or you will be dropped from the course!**
- 2) All lab assignments will be facilitated by BlackBoard. Lab exercises and reports can be downloaded and turned in under 'assignments' on the course page.
- 3) Lecture slides will be posted as a pdf file FOLLOWING each lecture session.

Exams: Four 100 point in-class exams will be given that will attempt to tie multiple concepts together. These exams will focus on problem solving and short descriptive essay questions. These are intended to show your ability to integrate the various physiological concepts. The final exam will not be fully cumulative, but will cover topics that are integrative and that are important to all sections of the course.

*****NO MAKEUP EXAMS WILL BE GIVEN*****

You must have a serious and compelling reason that can be documented in order to miss an exam, should this occur, the student and professor will develop a plan of action that best suits the circumstances of the absence.

Lab: Lab meets twice per week and attendance is mandatory. The lab experiments are the central piece of this course and some will involve experimentation with live animals. If you are not prepared to work with live animals, and in some instances sacrifice the animal for physiological study, you are highly encouraged to drop the course right away. Furthermore, some of the labs will require attention outside of the normal scheduled lab days; please do your best to meet these requirements, as it is a critical part of the experience. There will be several free lab days scheduled to make up for any time you put in outside of the scheduled class hours.

You will be associated with one group for the entire lab, and all assignments will be turned in as a group. Lab points vary and will reflect your performance in lab, participation, and your knowledge of the concepts demonstrated. Lab reports will also vary in content and structure, but will always be due one week following their completion (some labs take more than one session to complete).

Important: Working with live animals requires attention to detail and focus by all students, while at times the lab activities may be loud and collegial, even light-hearted, students are asked to take working with live animals very seriously and respectfully. **Anyone witnessed by the instructor or another student making light or engaging in disrespectful behavior regarding the animals used in the lab will be asked to leave and not come back.** This will result in a failing grade; the animals deserve our respect and anything less than 100% seriousness in this respect will not be tolerated.

Your final lab grade will be a doubled percent of the total score. For instance, if you earn 120 out of a possible 150 points, that's 80%, and you would be awarded 160 points out of 200.

Assessment: There will be a subjective grade worth 50 points based on your lab participation. 25 points will be peer-evaluated, and 25 points will be instructor evaluated. Not participating, being late, or unexcused absences will dramatically lower this grade.

Evaluation:

Four In-Class Written Exams (100 each)	400
Group Lab Reports (% of total x 2)	200
<u>Assessment (peer and instructor)</u>	<u>50</u>
Total Cumulative Points:	650

Grading: A percentage of total points will be calculated, and the following scale used:

A: 100-90; **B:** 89-80; **C:** 79-70; **D:** 69-60 **F:** 59-0

+/- will be assigned by instructor's discretion.

- The CR/NC grading option is not approved for this course; only letter grades can be earned.

Course Drop and Withdrawal Policy

The policies for add/drop or withdrawal during the summer session will be those of the University Extended Education program. Please familiarize yourself with this policy, as due to our abnormal start time, there may be discrepancies. The Program can be found on the web here: <https://www.csustan.edu/uee/summer-session-2015>

A grade of "incomplete" will only be considered when a serious and compelling reason is given. An Incomplete signifies (1) that a portion of required coursework has not been completed and evaluated in the prescribed time period due to unforeseen but fully justified reasons beyond the student's control, and (2) that there is still a possibility of earning credit. It is the responsibility of the student to bring pertinent information to the attention of the instructor and to determine from the instructor the remaining course requirements which must be satisfied to remove the Incomplete.

Academic Dishonesty: There will be a zero tolerance policy for academic dishonesty, this includes, but is not limited to, cheating, plagiarism, and use of course materials in an inappropriate manner such as posting online. Violating this policy will result in a failing grade for the course and referral to the Student Judicial Affairs Office. See University code of conduct for more info: <http://www.csustan.edu/judicial-affairs/student-responsibilities>

Don't Fall Behind! This is a difficult course due to the material, and it builds one day after the next. Skipping lectures, or putting off studying will result in you getting lost very quickly. If you keep up with the material, you will do much better and enjoy the course much more!!

YOU are responsible for YOUR education, but do not hesitate to get help when needed... Good Luck!

Tentative Schedule (seriously, tentative...)

Week	Day	Date	Lecture	Lab
1	R	28-Jan	Introduction and Orientation	<i>Looking Ahead</i>
2	T	2-Feb	Cell Biology	LAB: Organ Systems (Mouse and Frog Dissection with Tissue Collection)
	R	4-Feb	Cell Biology	LAB: Comparative Enzyme Rates
3	T	9-Feb	Metabolism	Lecture: Metabolism
	R	11-Feb	LAB: Oxygen Consumption and Specific Dynamic Action	
4	T	16-Feb	Neurons	Lecture: Neurons and Action Potential Activity
	R	18-Feb	Neural Modulation	FREE DAY
5	T	23-Feb	Senses	LAB: Daphnia with Q10
	R	25-Feb	Sympathetic Responses	LAB: Human Sympathetic Response; The Polygraph (BP 9)
6	T	1-Mar	EXAM I	<i>Looking Ahead</i>
	R	3-Mar	Muscles	LAB: Human Muscles (BP 1 and 2)
7	T	8-Mar	Muscles	LAB: Frog Muscle Action
	R	10-Mar	Cardiovascular Systems	Lecture: Cardiovascular Systems
8	T	15-Mar	Hearts	LAB: Human EKG and Pulse (BP 5 and 7)
	R	17-Mar	Cardiac Cycle	LAB: Effects of temp and drugs on frog heart
9	T	22-Mar	Cardiovascular Dynamics	FREE DAY
	R	24-Mar	EXAM II	<i>Looking Ahead</i>
10	March 28 th - April 1 st : Spring Break!!- No Classes or Labs			
11	T	5-Apr	Respiratory Systems	LAB: Spirometry (BP 12 and 13)
	R	7-Apr	Gas Exchange	LAB: Diving Physiology and Dive Reflexes
12	T	12-Apr	Comparative Respiration	LAB: Thermal Tolerance Experiment pt. 1-Introduction and Acclimation
	R	14-Apr	Thermal	LAB: Thermal Tolerance Experiment pt. 2-CTMax of Aquatic Insects
13	T	19-Apr	Thermal	LAB: Thermal Tolerance Experiment pt. 3-CTMax and CTMin of Goldfish
	R	21-Apr	Thermal	FREE DAY
14	T	26-Apr	EXAM III	<i>Looking Ahead</i>
	R	28-Apr	Nephron function	Lecture: Kidneys/LAB: Unilateral Nephrectomy Experiment pt. 1-Planning and Training (Quiz on pre-op packet)
15	T	3-May	LAB: Unilateral Nephrectomy Experiment pt. 2-Surgical Procedures and Recovery	
	R	5-May	Salt and water balance	LAB: Human Urinalysis and Salt Excretion
16	T	10-May	Gills and osmotic balance	LAB: Unilateral Nephrectomy Experiment pt. 3-Sacrifice, Dissection and Data Collection
	R	12-May	pH balance	LAB: The Osmorespiratory Compromise of Gills
17	T	17-May	Homeostatic mechanisms	Lecture: comparative homeostasis and course debrief
Exam IV and Final During Finals Week				

Highlighted weeks will require brief period of time outside of your normally scheduled hours for animal care. Free Days are given to make up for time spent outside of normal class hours.