Zoology 4230: Animal Physiology
Fall 2019

Lecture (001): TR 800-915
Lab (002): T 930-1220
Office: N270

Instructor: Brian Sardella, Ph.D.
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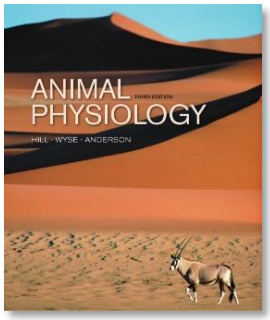
Office Hours: R: 9:30-11:00



Prerequisites: BIOL 3310, with a C or better, and CHEM 3010/3012.

Required Materials: Dissection Kit

Highly Recommended Materials: Hill and Wyse, Animal Physiology, 4th Edition. ISBN#: 9781605355948, or something comparable (save your money)

Other Recommended Materials: Lab Coat and Gloves (if desired), USB drive

Attendance: Students are expected to attend all lectures and lab sessions. Please do not come to class late, and limit coming and going during lecture to emergencies only, these behaviors are rude and disrespectful to the instructor and fellow students. Missing a lab that involves live animal work without prior permission, or a serious and compelling (and documented) excuse will result in a 5% overall grade decrease for each instance. If any labs are missed, the points earned by your lab mates will not be awarded.

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 (2018-2019-BioLabSafety: BioLabSafety). **If this is on your course list, it must be completed with a 100% score by August 31st or you will be dropped from the course!**
2) Lab exercises and background information can be downloaded on the lab section page under 'assignments'.
3) Lecture slides will be posted as a pdf file FOLLOWING each lecture session on the content page.

Exams: Four 100 point in-class exams will be given and will cover lecture and lab material from the corresponding section. These are intended to show your ability to understand and problem solve using the various physiological concepts and your understanding of the lab data.

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

You must have a serious and compelling reason that can be documented 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 once per week and attendance is required. 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 (with no hard feelings). You will be associated with a group of three for the entire semester, with all assignments turned in as a group. Lab exercises are available on Bb for download and must be turned in electronically; no paper lab reports will be accepted. Final Lab reports are due posted on Bb a by the Friday after the lab's completion (some labs are more than one week). The lab report logistics will be covered during an orientation on the first day. Each lab report can be worth 10-30 points, and the final score for lab will be based on a percentage of total points, with a maximum of 100 points possible. ALL assignments are subjected to anti-plagiarism software when submitted.

Important: Working with live animals requires attention to detail and focus by all students, while at times some lab activities may be loud and collegial, even light-hearted, students are asked to take working with animals very seriously and respectfully. **Anyone witnessed by the instructor or another student making light of, or engaging in disrespectful behavior toward, the animals used in the lab will be asked to leave and not come back.** This would result in a failing grade; the animals deserve our respect and anything less than 100% seriousness in this respect will not be tolerated. Furthermore, please refrain from engaging in outside activities during these technically challenging labs (ie; studying for other courses, texting, or internet surfing). We are also not permitted to film or take photos of the animal experiments; this violates the policy of the Institutional Animal Care and Use committee.

Assessment: There will be a subjective grade worth 25 points based on your lab participation. Not participating, being late, working on non-lab materials, or unexcused absences will dramatically lower this grade.

Evaluation:

Five In-Class Exams (100 each)	400
Lab Reports (% of Total)	100
Assessment	25
Total Cumulative Points:	525

Grading: A percentage of total points will be calculated, and the following scale used:
A: 100-93; **A-**: 92-90; **B+**: 89-87; **B:** 86-83; **B-**: 82-80; **C+**: 79-77; **C:** 76-73; **C-**: 72-70; **D+**: 69-67; **D**: 66-60; **F**: 59-0

- These cut offs are absolute, please do not ask to be bumped up because you are close to the next grade level.
- No requests for extra assignments or special consideration will be given at the end of the course.
- The CR/NC grading option is not approved for this course; only letter grades can be earned.

Course Drop and Withdrawal Policy
Withdraw after the census date can only be done with a documented serious and compelling reason. The Enrollment Services Office will not sign a withdrawal form otherwise, regardless of the instructor's view. It is highly recommended that if you wish to drop the class, you do so by the census date! A grade of "incomplete" will not be considered under any circumstance. Should you be unable to finish the course past the census date, you must petition for a withdrawal.

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 an immediate failing grade for the course, and subsequent referral to the Student Judicial Affairs Office. See University code of conduct for more info:
http://www.csustan.edu/judicial-affairs/student-responsibilities.
In accordance with CSU Stanislaus and IACUC policies, video and/or audio recording of lecture or lab is not allowed.

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

Tentative Schedule (seriously, tentative…)

Date	Day	Lecture	Book	Lab
22-Aug	R	Course Introduction-Animals and Environments	1	
27-Aug	T	Cells Tissues and Homeostasis	2	Safety Training and Lab Intro
29-Aug	R	Energy, Enzymes, and transport	2	Introduction to Physiology Data
3-Sep	T	Vertebrate Digestion Systems	6	The Q_{10} effect on Enzyme Activity
5-Sep	R	Whole-Animal Metabolism	7/8	
10-Sep	T	Thermal Physiology	10	The Q_{10} effect on Whole Organism Metabolism
12-Sep	R	Thermal Physiology	10	
17-Sep	T	**EXAM 1**		Thermal Effects on Lizard Sprint Velocity
19-Sep	R	Animal Neurons and Action Potentials	12	
24-Sep	T	Synaptic Transmission and Post-synaptic Potentials	13	Compound Action Potentials in the grass frog
26-Sep	R	The Sympathetic Response	15	
1-Oct	T	Sensory Systems	14	Integrative Nervous Physiology in humans
3-Oct	R	The Endocrine System	16	
8-Oct	T	*Columbus Day-No Class*		*Columbus Day-No Lab*
10-Oct	R	Muscle Dynamics and Contraction	19	
15-Oct	T	Muscle Metabolism	20	Muscle twitch in the frog gastrocnemius
17-Oct	R	**Exam 2**		
22-Oct	T	Cardiovascular Physiology	25	Introduction to Rodent Surgery and Nephrectomy
24-Oct	R	Cardiovascular Physiology	25	
29-Oct	T	Cardiovascular Physiology	22	Chronotropy and Inotropy in the bullfrog heart
31-Oct	R	The Respiratory Systems of Animals	23	
5-Nov	T	Gas Exchange and Transport	24	Respiration and Acid/Base Balance
7-Nov	R	Cardiopulmonary and Diving Physiology		
12-Nov	T	**EXAM 3**		Unilateral Nephrectomy-Training and Quiz
14-Nov	R	Environments and Osmoregulation	28	Rat Monitoring Begins
19-Nov	T	LAB---------->		Unilateral Nephrectomy-Surgery and Monitoring
21-Nov	R	Problems of Salt and Water Balance	27	
26-Nov	T	The Mammalian Kidney	29	Unilateral Nephrectomy-Data Collection and Dissection
28-Nov	R	*Thanksgiving Day-No Class*		
3-Dec	T	The Mammalian Kidney	29	The Osmorespiratory Compromise in the Gill
5-Dec	R	Renal Homeostasis		
10-Dec	T	Multifunctional Gill		ORC and Nephrectomy results discussion and data
		Exam 4 during Finals Week		