Syllabus

Spring, 2007
ANSC 3405
Advanced Physiology of Domestic Animals

Students with disabilities should see the instructor for assistance

Course Objectives

The objective of this course is to provide motivated undergraduate students an overview of animal physiology that includes an appreciation of the history, complexity and integration of animal physiology research that forms the basis of our current understanding of physiological mechanisms.

Students will have an understanding of complex, but interesting interactions common in physiological systems. Anatomical highlights will be used to illustrate structure-function relationships, therefore ANSC 2202 (or its equivalent) is a prerequisite for this class. Students will see and study experimental protocols that form the basis for our current understanding of physiological mechanisms.

Course Format

Students will have homework, reading assignments and problems to solve. Three formats will be used for the honors portions of the course: lectures (Tue-Thur 12:30-1:50), and a physiology/surgery laboratory (Monday 3-5:50 pm).

Contact Information

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Texts

The lecture text will be:
Eckert Animal Physiology. 2002. Randall, Burggren and French. Freeman.
Please read the appropriate text topic before class on that subject (quizzes may include reading assignments).

For laboratory, students must keep a lab book with carbon copies. Each animal laboratory, students will write up each lab as an experiment.

Grading

Grades will follow the standard break points:

		Total Points Needed
90.0%	A	720
80.0-89.9%	B	640
70.0-79.9%	C	560
60.0-69.9%	D	480
Below 60.0%	F	<480

Animal science majors must have a C or better to receive credit for this course.

Source of points

Hour exams (3)	300 (37.5%)
Quizzes, homework, projects	100 (12.5%)
Final exam (comprehensive)	200 (25%)
Laboratory	200 (25%)
Total	800 (100%)

Quizzes, Exams and Homework Assignments

The lecture will have three hour exams and a final exam. Each exam will be comprehensive. That means that each exam can include all of the material previously presented. Some topics re-appear later in importance and many topics build on each other, so it is important not to forget the past material because we have an exam. The final is also a comprehensive exam.

A total of 10 quizzes, homework assignments or other assignments will be completed. The assignments must be turned in on time. The penalty for turning in any assignment late is 25% of the points per day they are late. If you must travel on university or personal business, assignments must be turned in ahead of the trip. Most homework assignments will be checked in the lab workbook. If there are missing assignments in the workbook, the student must make sure to complete the assignment for the next workbook check or more points will be deducted.

Attendance in Class and Lab

Attendance in class and labs is mandatory. You may miss **two unexcused class lectures** without penalty. Beyond that, there will be a 20 point penalty per missed class (after the first 2). If you know you will absent prior to class, please let us know.

Attendance in laboratory is mandatory. It is very difficult to make up laboratories due to the "hands-on" nature of the class. There must be an excused absence (doctor's note, funeral, etc…) for any lab that is missed. For each unexcused absence in lab, 10 pts will be deducted from the lab grade.

Laboratory

Every student participates in every laboratory. Notebook records will be complete. Students will be assigned one of 5 experiments to present at the end of the lab class. The lab notebook will be 20 points per study. The presentation of your study will be worth 100 points.

Students will need to have a chemistry lab notebook that has carbon copies that can be turned in each week.

Lecture Topics and Approximate Dates*

Day	Date	Topics	Readings/Assignments	Instructor
Th	11-Jan	Introduction/ Homeostasis/ body size	Preface, Ch 1; p 675-681**	JJM
T	16-Jan	Cell Biology	Ch 2,3	JJM
Th	18-Jan	Cell Biology	Quiz 1, Ch 4	LH
T	23-Jan	Neuroendocrinology	Ch 5,6,9	LH; MG
Th	25-Jan	Endocrinology/Reproduction	Ch 9 + materials provided	LH; MG
T	30-Jan	Neurons	Ch 5	JJM
Th	1-Feb	Nervous system I	Quiz 2, Ch 8	JJM
T	6-Feb	Exam #1	All prior material	MG
Th	8-Feb	Nervous system II	Ch 8	JJM
T	13-Feb	Nervous system III	Ch 8	JJM
Th	15-Feb	Nervous system conclusions	Quiz 3, Ch 7	JJM
T	20-Feb	Sensory	Ch 7	MS; MG
Th	22-Feb	Sensory	Quiz 4	MS
T	27-Feb	Muscles/Movement	Ch 10,11	MS
Th	1-Mar	Movement/Cardiovascular	Quiz 5, Ch 12	JJM
T	6-Mar	Cardiovascular	Ch 12	JJM
Th	8-Mar	Exam # 2	All Prior material	JJM
T	13-Mar	No class	SPRING BREAK	
Th	15-Mar	No class	SPRING BREAK	
T	20-Mar	Cardiovascular	Ch 13	JJM
Th	22-Mar	Exam #2	Quiz 6, Ch 13	
T	27-Mar	Respiratory/Acid-base/Osmotic/Ionic	Ch 14	JJM
Th	29-Mar	Osmotic/renal	Quiz 7, Ch 14	JJM
T	3-Apr	Digestion	Ch 15	GI DOCS
Th	5-Apr	Digestion & Metabolism	Ch 15	GI DOCS
T	10-Apr	Hematology/immunology	Materials provided	LH
Th	12-Apr	Immunology	Quiz 8	MS
T	17-Apr	Immunology	Materials provided	MS
Th	19-Apr	Integrated Physiology	Materials provided Quiz 9	JJM
T	24-Apr	Hour Exam #3	(last day to give exams)	
Th	26-Apr	Integrated Physiology	Quiz 10/replacement Quiz	JJM
T	1-May	Review		ALL
		FINAL EXAM		

** Start with Heading: BODY SIZE AND METABOLIC RATE on page 675 and go through the Question box on page 681 (Energetics will be covered later).

*The instructors reserve the right to change the schedule and exams with prior notice to

students.

Laboratory (Mon 3:00-5:50)

#	Date		Topic	Experiment
1	22-Jan		Cell Biology/Hematology; Pipetting; ACUC; Literature searches	
2	29-Jan		General large animal surgical practices	
3	5-Feb		Rodent and surgical techniques	
4	12-Feb	MG		
5	19-Feb		Rodent care, Behavior tests and endocrinology	1
6	26-Feb		Immunology 1	4
7	5-Mar		Immunology 2	4
	12-Mar	MG	No class; spring break	
8	19-Mar		Pig brain surgery (i.c.v. cannula + i.v. catheter)	2
9	26-Mar		Neuroendocrinology/behavior	1, 2
10	2-Apr		Cardiovascular, Renal and brain anatomy	3
	9-Apr		No Class; Easter holiday	
11	16-Apr		G.I. physiology	5
12	23-Apr		Integrated physiology	1
13	30-Apr		Laboratory final presentations	

Laboratory Experiments

1 Reproduction/endocrinology
2 Neuroscience
3 Cardiovascular/Renal
4 Immunology
5 Gastrointestinal
plus
6 Integrated physiology