

Biology 316: Comparative Animal Physiology

(3 Credits)

FALL 2008 SEMESTER

Lecture: WRB 2003 – Monday & Wednesday 1:00 – 2:15 pm

Instructor: Dr. Jeffrey Baguley

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Catalog Description: “Animal function from a comparative perspective with emphasis on vertebrates.”

COURSE OBJECTIVES – This course aims to survey animal physiology from a mechanistic, evolutionary, comparative, and environmental perspective. Therefore emphasis will be placed on the mechanisms by which animals perform their life-sustaining functions, the evolution and adaptive significance of physiological traits, the ways in which diverse phylogenetic groups of animals resemble each other and differ, and the ways in which physiology and ecology interact in both the present and during evolutionary time. Therefore, our discussions will span both vertebrate and invertebrate models to illustrate how largely divergent evolutionary groups have evolved different mechanisms to cope with similar environmental constraints.

REQUIRED TEXT – *Animal Physiology* (Hill, Wyse, Anderson, 2nd Edition)

Supplements – We will also rely heavily upon primary literature sources. Assigned journal readings will supplement each chapter.

Principles of Animal Physiology (by Moyes and Schulte, 2nd Edition) will be used as a supplementary text and is on reserve in the Knowledge Center.

ATTENDANCE - Attendance is highly recommended in the two 75-minute lectures each week as detailed notes will not be posted online.

DROPPING – 17 October 2008 is the last day for dropping the course without grade and for changing from credit to audit. No drops or changes to audit will be permitted after this date.

ASSESSMENT OF LEARNING – GRADING

Exams – Four lecture exams (100 pts each) will be given during the course of the semester. The exams will consist of multiple choice questions, short answer questions, and essay questions. Exams will be based on readings from the text and journal sources as well as material covered in lectures.

Quizzes – Quizzes will occur periodically throughout the semester. Quizzes will be unannounced. Quizzes will cover material from assigned readings (text and journal sources) as well as material covered during class. The quiz format will be multiple choice or short answer and will consist of 1-4 questions.

Lecture grade calculated as follows:

Exam 1	22-Sept	100 points
Exam 2	15-Oct	100 points
Exam 3	12-Nov	100 points
Exam 4	15-Dec	100 points
Quizzes	periodically	50 points
TOTAL		450 points

EXTRA CREDIT – There will be **NO** extra credit points available in this course.

GRADES – Grading will be letter grades. Plus and minus grades will not be assigned.

A	>90.0%
B	89.9 – 80.0%
C	79.9 – 70.0%
D	69.9 – 60.0%
F	<60.0%

ACADEMIC DISHONESTY STATEMENT - Absolutely no cheating will be tolerated during lecture exams or quizzes. The first instance will lead to a warning and a zero for that particular work, a second instance will lead to failure in the class.

DISABILITY STATEMENT - Any student with a disability needing academic adjustments or accommodations is requested to contact both the instructor and the Disability Resource Center (Thompson Building - 107), as soon as possible to arrange for appropriate accommodations.

LECTURE SCHEDULE

<u>DATE</u>	<u>LECTURE TOPIC</u>	<u>READING</u>
08/25/08	Introduction, Animals & Environments 1	Ch 1
08/27/08	Introduction, Animals & Environments 2	Ch 1
09/01/08	Labor Day - No Class	
09/03/08	Animal Diversity Review	TBA
09/08/08	Molecules & Cells 1	Ch 2
09/10/08	Molecules & Cells 2	Ch 2
09/15/08	Genomics and Proteomics 1	Ch 3
09/17/08	Genomics and Proteomics 2	Ch 3
09/22/08	Exam 1	
09/24/08	Nutrition, Feeding, & Digestion	Ch 5
09/29/08	Energy Metabolism	Ch 6
10/01/08	Aerobic/Anaerobic Metabolism & Energetics	Ch 7, 8
10/06/08	Thermal Physiology 1	Ch 9
10/08/08	Thermal Physiology 2	Ch 9
10/13/08	Thermal Physiology 3 - Guest Lecture	Ch 9
10/15/08	Exam 2	
10/20/08	O ₂ & CO ₂ Physiology	Ch 21
10/22/08	External Respiration (Breathing)	Ch 22
10/27/08	External Respiration (Breathing)	Ch 22
10/29/08	O ₂ & CO ₂ in Fluids	Ch 23
11/03/08	Circulation 1	Ch24
11/05/08	Circulation 2	Ch24
11/10/08	Diving in Marine Mammals	Ch25
11/12/08	Exam 3	
11/17/08	Water & Salt Physiology: Introduction & Mechanics	Ch 26
11/19/08	Water & Salt Physiology: Animals in their environments I	Ch 27
11/24/08	Water & Salt Physiology: Animals in their environments II	Ch 27
11/26/08	Excretion I	Ch 27
12/01/08	Excretion II	Ch 28
12/03/08	Mammals of Deserts and Dry Savanas	Ch 29
12/15/08	Exam 4 at 12:00 noon	

