BIOL 433/533 ENVIRONMENTAL PHYSIOLOGY
Instructor: Dr. Martin A. Salah, Lif Science Building 108
Class Meeting Time: MW 12:00-13:30, Lecture Hall: Life Science Lab
Text: Willmer, P., G. Stone, and I. Johnston. 2005. Environmental Physiology of Animals, 2nd edition. Blackwell Science, London.

The purpose of this course is to familiarize the student with environmental, or ecological, physiology in animals. This discipline is principally concerned with how animals are physiologically adapted to the environment in which they live. In this course, we will be concerned mainly with vertebrate animals, although some invertebrate examples will be included as well. Another objective of this course is to enable the student to apply knowledge about physiology and adaptation to identifying appropriate questions for research and correctly interpreting data. The general procedure we will use to accomplish these objectives is to introduce the physiological problems that animals must deal with and then discuss the solutions to those problems that have evolved in different animals.

The class will consist of both lectures and discussion of recent literature relating to the lecture topic, as well as a few laboratory demonstrations of techniques and physiological phenomena related to topics that we are discussing in lecture. The discussion portion of the course will usually occur on Fridays and will cover recent literature that the student is expected to have read before attending class. Grading will be based upon performance on the 3 exams (90%) and quizzes over reading material (10%). Graduate students will be expected to lead some of the class discussions over the reading material.

TENTATIVE COURSE OUTLINE

Date	Topic	Text Reading	Discussion Reading
1/18-1/20	Introduction to Adaptation, Lecture Notes; Figure1; Fig 2, Fig 3; Fig 4	Chapters 1-2	
1/23 - 1/27	Energy Metabolism	Chapters 3 & 6	
1/30 - 2/3	Energy Metabolism, Figures; Lecture Notes, Locomotion Energetics, Lecture Notes, Figures	"	Rezende et al 2004; PowerPoint
2/6 - 2/10	Temperature, Lecture Notes; Fig 1, Fig 2, Fig 3	Chapter 8	Guglielmo et al 2002; PowerPoint

2/13 - 2/15	Temperature, Lecture Notes 2; Figures 1, 2	"	
2/17	EXAM 1		Practice Exam 1, Study Guides 1, 2
2/20	President's Day - NO CLASS		
2/22 - 2/24	Temperature	"	
2/27-3/3	Frog and Toad Overwintering Temperature	"	Frog & Toad: Powerpoint slides; Layne and Jones 2001; PowerPoint
3/6 - 3/10	SPRING BREAK - NO CLASS		
3/13 - 3/17	Birds in the Cold Lecture Gas Exchange, Lecture Notes; handout	Chapter 7	
3/20 - 3/24	Gas Exchange; Lecture Notes 2; Table; P_{50} Handout; Handout 1; Organic Phosphates; handout	"	Hetz and Bradley 2005; Powerpoint
3/27 - 3/29	Gas Exchange; Fig 1; Fig 2; Fig 3; Fig 4	"	
3/31	EXAM 2		Practice Exam
4/3 - 4/7	Water and Ions; Lecture Notes 1; Ion comp handout; Telelost ion reg handout; salt gland handout	Chapters 4-5	
4/10 - 4/12	Water and Ions; Lecture Notes 2; handout	"	Tracy and Walsberg 2002; PowerPoint

4/14	EASTER BREAK - NO CLASS		
4/17	EASTER BREAK - NO CLASS		
4/19-4/21	Water and Ions	"	
4/24-4/28	Digestive and Nutritional Physiology; Lecture Notes; handout 1; handout 2; handout 3	Chapter 15, p. 602-609	Karasov et al 2004; PowerPoint
5/1 - 5/5	Digestive and Nutritional Physiology - Dietary Fats and Performance; Lecture Notes Dehydration and Freezing Tolerance in Anurans		
5/9 - 8 pm (Tuesday)	EXAM 3		Practice Exam; Graphical Study Questions