

Biology 550
Advanced Comparative Physiology
Spring 2006

204 Thomas Hunt Morgan

PROFESSORS:

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Text: *Comparative Animal Physiology* by Philip C. Withers: 1992 by Brooks/Cole Publishing Co. Inc. ISBN 0-03-012487-1

Course Prerequisites:

- Successful completion of BIO 350 or its equivalent.
- Successful completion of 1 semester of calculus (Math 113 or 123)
- Successful completion of 3 semesters of chemistry (Chem 105, 107 and organic).
- A single semester of introductory biochemistry is recommended but not required.

COURSE OBJECTIVES and TEACHING PHILOSOPHY:

This course in animal physiology will take an integrative approach in presenting the subject matter. This means that we will consider the entire animal when discussing a particular physiological system (i.e. the complete cardiovascular system during exercise). There are two major ingredients that will greatly assist students in their success in this course; 1) Completion of the textbook and supplemental reading material *prior to* attending each class 2) effective written communication of laboratory results, data analysis and conclusions and 3) students engaging themselves in the classroom discussions throughout the semester. The maximum number of students in this course is limited to 20. Therefore, students will be required to think critically, express themselves orally and provide provocative and intellectual discussion to the data and topics that are presented.

Students should emerge from the course with a firmly founded understanding of: 1) An advanced understanding of the fundamental concepts of physiology; 2) how the scientific and experimental process is used to deduce these basic concepts; and 3) how organisms

across the animal kingdom utilize similar and different physiological functions as fundamental adaptations to their existence within the environment. As a means towards that end, it is often necessary to memorize certain terms, and certain anatomical details. Knowing these terms and the anatomy is useful, but not as important as understanding the concepts. Terms, anatomy and fundamental informational content is only a means to an end, not an end goal in and of itself. The end goal instead is to understand how different organisms use similar and different physiological methods as a means towards homeostatic regulation.

Each of you may or may not choose to become professional physiologist in the future. Thus, the goal in this course is for you to retain knowledge of the basic fundamental concepts which you can apply in any future endeavor in the biological sciences.

ASSESSMENT AND EVALUATION OF PERFORMANCE

This is a graduate level course and the assessment of student course performance will be conducted in a graduate course manner. The following is a breakdown of how student performance will be evaluated:

Exam #1:	25%
Exam #2:	25%
Final Exam:	35%
Lab Evaluations:	15%

Numerical course performance will be the equivalent of:

85% - 100% = A

70% - 84% = B

60% - 69% = C

50% - 59% = D

< 50% = E

Course grades and assessments will not be “curved” based upon the performance of others in the class.

Examinations will be comprehensive at each assessment time period. In other words, exam #2 will include concepts that were covered in exam #1 and similarly the final exam will cover concepts that were included in the first 2 exams. Laboratory evaluations will cover material from the textbook, supplemental readings and class discussions sessions in a comprehensive manner. In other words, by the end of the course, material should be learned in a complete manner for a total understanding of whole organism functions. Objective material and information will serve only as the foundation for understanding the overall functions of organisms and organ systems. Evaluations (both lab and exam) will require applications of information to real world and experimental data, appropriate interpretation of that data and the derivation of viable conclusions from the data analysis and interpretation.

UNIVERSITY POLICY ON EXCUSED AND UNEXCUSED ABSENCES

The following are acceptable reasons for excused absences:

1. serious illness of student (doctor's note required)
2. illness or death of family member (doctor's note required)
4. Major religious holidays. Students **MUST** notify Dr. Osborn prior to February 1, 2006 **IN WRITING** of all semester holidays to assure being excused.

ABSENCE FROM CLASS, MISSED ASSIGNMENTS

If you miss a class, or fail to hand in an assignment at the beginning of class, you will lose the credit associated with this assignment. If you want credit for these omissions, you must contact Dr. Osborn within 24 hours of the omission and explain the reasoning for the incomplete assignment. Receiving credit for missed or late assignments is at the discretion of the instructor. You will find that it is in your best interest to hand in assignments, even if late, although you may not receive credit for such assignments.

MAKE-UP OF MISSED EXAMS

If you miss an exam, you will have to make up the missed exam by taking an oral exam with Dr. Osborn over the comprehensive missed material to be assessed within 1 week of the missed exam date. **In all cases, you must present a doctor's note, or other (as outlined above) to the instructors within 48 hours of missing any exam.** This policy includes the final exam.

CHEATING AND PLAGIARISM

Cheating and plagiarism are academic offenses that are not tolerated at the University of Kentucky. The minimum penalty for either of these offenses is a failure in the course. Suspension and/or dismissal from the university may result from single, repeated or more serious offenses involving cheating and plagiarism.