

**THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO
SCHOOL OF HEALTH AND HUMAN PERFORMANCE
DEPARTMENT OF EXERCISE & SPORT SCIENCE**

Fall 2005

COURSE NUMBER: ESS 670

COURSE TITLE: Physiology of Exercise

CREDITS: 3

PREREQUISITES: ESS 375 (or equivalent) or permission of instructor

FOR WHOM PLANNED: This course is required for students in the Master's program in exercise physiology and is an elective course for all other graduate students.

INSTRUCTOR: Allan H. Goldfarb, PhD; 334-3029; email: ahgoldfa@uncg.edu
Room 260 HHP Building.

Office hours: Monday 9:-10:00 a.m. and Tuesday, Thursday 8-9:00 a.m. or by appointment.

CATALOG DESCRIPTION: An in-depth study of the physiological alterations to the body that may arise from acute and chronic exercise with implications to both health and performance.

STUDENT LEARNING OUTCOMES: By the end of the course, students should be able to:

1. Define, describe & discuss; a) basic bioenergetics for carbohydrate, lipid & protein metabolism; b) basic muscle structure & function; c) basic pulmonary & cardiac function.
2. Analyze, appraise & compare changes that occur during the transition from rest to exercise for the topic areas listed in #1.
3. Analyze, appraise and compare changes that occur to the factors in topic areas listed in # 1 with chronic exercise adaptations.
4. Evaluate, criticize & judge the usefulness of dietary and exercise information presented to the general public, including the latest 'fads' for exercise & diet.
5. Manage, categorize & assess data from research articles and summarize the useful facts for different populations (sedentary versus active).

TEACHING STRATEGIES: This class is predominately lecture format, but assignments and case studies will be used to help you learn calculations and apply knowledge presented in lectures.

EVALUATION & GRADING:

Assignments*: 50 points (SLO 1-4)

Examination 1: 100 points (SLO 1,3)

Examination 2: 100 points (SLO 1,2,3)

Examination 3: 100 points (SLO 1,2)

Presentations**: 50 pts (SLO 3, 4)

Final Examination[§]: 100 points (SLO 1-4)

*Assignments will consist of work sheets that provide examples of calculations that would be required to apply the knowledge and equations learned in class. The equations and calculations necessary to complete the work sheets are representative of the types of calculations you will be required to complete on examinations.

**Each student will prepare a 5-10 minute presentation on a topic that is related to exercise physiology (you will choose your topic area and get it approved by discussing it with the instructor). You will be required to make PowerPoint slides that will be posted on Blackboard for all students in the class. Presentations will be made the last day of class.

[§]The final examination may or may not be comprehensive dependent upon performance on the exams.

In general, I will use the following grading cutoffs: If there is a + or – it will be every three points.

92% and up	A	A ⁻	88-91	B ⁺	85-87
82% to 84%	B	B ⁻	78-81	C ⁺	75-77
70% to 74%	C				
65% to 69%	D				
64% and below	F				

I reserve the right to be flexible with this cutoff procedure, and will adjust the grade cutoff to match breakpoints in test scores.

REQUIRED TEXTBOOK: McArdle, Katch & Katch. Exercise Physiology 5th Edition by Lippincott, Williams & Wilkins, 2001 or 4th edition if you have.

Brooks, Fahey and Baldwin. Exercise Physiology: Human Bioenergetics and Its Applications 4th edition by McGraw Hill, 2005 is another book for those students who are exercise physiology majors and want a more advanced textbook.

TOPIC OUTLINE: The following topics will be covered;

1. Introduction & review
2. Bioenergetics
3. Skeletal Muscle
4. Circulation
5. Ventilation

ACADEMIC INTEGRITY: I expect all exams to be 'pledged', with your signature and date. This means you understand the academic integrity policy of UNCG and that you understand if you are caught cheating on your exam, you will earn a grade of 0% for that examination and fail the class. You can read the UNCG academic integrity code at <http://saf.dept.uncg.edu/studiscp/Honor.html>.

ATTENDANCE POLICY: Students should let the instructor know before class if they will be absent.

ADDITIONAL REQUIREMENTS: Please put beepers in vibrate mode or turn them off. Cell phones should also be turned off during class. These items are disruptive and it is disrespectful to the instructor and your classmates to have beepers and cell phones turned on during class.

This class is intense and demanding. You must develop a certain level of determination, discipline and dedication in order to succeed in this class. Attendance at lectures is strongly encouraged and highly recommended, although not mandatory. The complexity and volume of the material in this class makes studying imperative. You should study at least 9 hours/week (or more) outside of class if you want to earn a **B** in this class.

Students with any special requirements should speak with me directly. If you have a documented learning disability, please supply me with the paper work within the first week of class so that I can make adjustments for your specific situation.

My teaching style may not be suitable for all learning styles. Please make arrangements to see me if you are having problems understanding the material in the class or if the teaching style I have makes it difficult for you to learn. If you have no background in Exercise Physiology and no background in science please see me immediately to discuss this situation.

Conflicts with the exam schedule are bound to occur. If you know you have conflicts with the exam schedule, please arrange an alternate time to take the exam **ahead of time**. Missing an exam will result in a **ZERO** unless prior arrangements are made or adequate documentation is provided.

TENTATIVE COURSE OUTLINE

<u>Meeting</u>	<u>Topic</u>	<u>Text Reading Assignment*</u>
1	Introduction to course	Ch. 4 & 5
2	CHO Metabolism	Ch 6 & 7
3	Protein & Fat Metabolism	Ch 6 & 7
4	EXAM 1	
5	Energy Expenditure (EE)	Ch 8 - 11
6	Exercise EE	Ch 8 - 11
7	O ₂ Deficit & Debt	Ch 8 - 11
8	EXAM 2	
9	Muscle & Neural	Ch 18 & 19
10	Muscle & Neural	Ch 18 & 19
11	Exam 3	
12	Cardiovascular	Ch 15 - 17
13	Cardiovascular	Ch 15 - 17
14	Respiratory	Ch 12 - 14
15	Thanksgiving Break	
16	Student Presentations	
17	FINAL EXAM: 3:30 to 6:30 pm Based on schedule for Final Exams.	

* refers to Exercise Physiology Text 5th edition by McArdle, Katch and Katch