Instructor: Jonathan PW Payne  
Office: Silcox 150  
Office hours: MWF 11:00AM-2:00PM, T/Th 11:00-1:30  
Phone: (843) 953-1039 (office)  
Email: paynejp@cofc.edu  
Course meeting:  

Prerequisite courses: BIOL 201 Human Physiology, PEHD 201 Introduction to Physical Education, or ATEP 245  

Course Description: The purpose of this course is to provide students with a working knowledge of the physiological responses and adaptations to exercise, with application of these principles to allied health, physical education, physical fitness, and coaching. The course will also incorporate problem solving modules, which will allow the students to research, discuss, debate, and present information on controversial issues in exercise physiology. The laboratory is designed to provide "hands on" experiences and practice with blood pressure, body composition, aerobic and anaerobic field and laboratory tests, wet chemistry (cholesterol analysis) and maximal oxygen consumption tests. The lab also provides a venue to refine scientific writing skills and to reinforce the course content. The combination of experiences in this class will increase student "literacy" in exercise physiology, familiarize them with field-specific jargon, improve their ability to read and understand the literature, and to be conversant on basic topics of interest.  

Laboratory Manual: 5th edition (or newer), McGraw-Hill: New York, NY. 2007. Older editions of books can be made to work, but the student will be responsible for finding the material.  

Objective: Provide students with a variety of learning experiences and exercise physiology topics to increase their fluency in the discipline, as measured by tests, quizzes, written problem-solving assignments, and written laboratory reports.
**Student Learning Outcomes:**

Upon successful completion of the course, the student will be able to:

1. Identify key events in exercise physiology history and people who contributed significantly to the development of the field.
2. Understand the step-by-step process of muscle contraction, including energy provision, metabolite production, circulation, heat transfer, endocrine regulation, etc.
3. Describe training-induced changes in skeletal muscle, the dynamic function of muscle and the contribution of different muscle fiber types to exercise.
4. Describe the innervation of skeletal muscle, conduction of a motor nerve impulse and know how the nervous system regulates contraction during exercise.
5. Demonstrate a working knowledge of cellular energy production by each of the three energy systems.
6. Show their knowledge of cardiovascular anatomy, blood delivery and distribution during exercise, basic ECG and cardiovascular adaptations to training.
7. Describe and show a strong working knowledge of exercise prescription and methods of prescribing exercise intensity for aerobic and resistance exercise.
8. Understand acclimation and acclimatization to exercise performed in extreme environments.
9. Identify exercise responses of subjects in special populations (e.g., aging or chronic disease).
10. Demonstrate knowledge of the physiology of the immune system and how it responds to moderate and extreme exercise.
11. Understand the physiological responses and symptoms of overtraining syndrome, the potential benefits of tapered or reduced training, and the rapid deterioration in fitness with cessation of training.
12. Use class information, previous knowledge and outside research to solve problems in exercise physiology.

Online quizzes will be available on OAKS for selected dates. The online quizzes will primarily test your knowledge of basic physiology. The quiz time is set for 20 minutes, with a five minute grace period. You will only get one chance to take the quizzes. Therefore, it is necessary for you to review the chapter material prior to signing on for the quiz.

**Problem Solving:** You will be assigned to small groups, at random. You will work in these groups to find information to solve the problem. For the mini-problem: You will present your work as a group, but each person will have their work identified and will be graded accordingly.
For problem-based learning: You will give a group presentation, with each person responsible for a sub-section of the presentation. You will be graded on your individual presentation. There will be clear instructions and a rubric for each assignment. Generally speaking, students who follow instructions perform better on these assignments.

Grading Scale:
A: 90-100
B: 80-89
C: 70-79
D: 60-69
F: 59 or below

Make up policy: In class quizzes cannot be made up for any reason. If you are late for class, you will not receive extra time for the quiz. Quizzes may be announced one week in advance or could be unannounced. Online lecture quizzes must be taken within the assigned time.

Exams: If you have a conflict or if you are ill, you will be allowed to schedule a make-up exam, but the make-up exam will be more difficult than the regular exam. If you miss a class you are responsible for getting the material from another student. The instructor will not provide handouts or lecture information for those who are absent.

Attendance: Attendance will be taken daily. Students are expected to attend class. Two points will be deducted from your final grade for each absence after three. More than five absences will result in a WF (for excessive absences). No excuses will be considered for absences.

Policies: College of Charleston Student Handbook: This is a guide to your responsibilities and rights as a student. If you are not familiar with this document, please take the time to review the information contained within the handbook.

College of Charleston Honor Code and Academic Integrity
Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student’s actions are related more to a misunderstanding will handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file. Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student
found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student's transcript for two years after which the student may petition for the XX to be expunged. The F is permanent. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board. Students should be aware that unauthorized collaboration--working together without permission--is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others' exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor. Students can find the complete Honor Code and all related processes in the Student Handbook at http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php

Disability- If there is a student in this class who has a documented disability and has been approved to receive accommodations through the Center for Disability Services/SNAP (Students Needing Access Parity), please come and discuss this with me after class or during my office hours.

This College abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. If you have a documented disability that may have some impact on your work in this class and for which you may require accommodations, please see an administrator at the Center of Disability Services/SNAP or me so that such accommodation may be arranged.

Tentative Class Schedule (Subject to Change)
Week 1: Introduction, Language of Exercise, Historical Perspective
Week 2: Historical Perspective cont., Muscle Structure
Week 3: Muscle Contraction, Sliding Filament Theory- Ch. 8
Week 4: Muscle Action/Signaling/Function/Fiber Type (EXAM 1)
Week 5: Neuromuscular Adaptions/Regulation- Ch. 7
Week 6: Bioenergetics- Ch. 3
Week 7: Energy Systems (Aerobic) Ch. 3-4
Week 8: Energy Systems (Anaerobic) (EXAM 2)
Week 9: Performance Enhancement
Week 10: Cardiac Cycle & ECG- Ch. 9
Week 11: Hemodynamics, Blood Flow During Exercise- Ch 9
Week 12: Cardiovascular Adaptations to Exercise (EXAM 3)
Week 13: Laboratory Assessment of Performance, Quantifying Training- Ch. 20-21
Week 14: Exercise Prescription- Ch. 16, 24
Week 15: Presentations (FINAL)