

**Spring 2019**  
**APK 3110C-Section 0938**  
**Physiology of Exercise Training**

Instructor: Dr. Demetra Christou  
Email: [ddchristou@ufl.edu](mailto:ddchristou@ufl.edu)  
Office: FLG 120  
Phone: 352-294-1715  
Office Hours: F 2 to 3 pm  
& by appointment  
Class Times and Location: MWF Period 6 (12:50 to 1:40 pm) FLG 220

**Course Overview**

This introductory course in exercise physiology is designed to provide an overview of the acute and chronic physiological responses to exercise. Particular attention is placed on muscle bioenergetics and metabolism, as well as, the cardiopulmonary responses to exercise. Special topics include exercise testing and prescription, training adaptations and exercise in hot and cold environments.

**The prerequisite for this course is successful completion of APK 2105C (Applied Human Physiology) with a grade of C or better and junior standing or above.**

**Course Objectives**

By the end of this course, students will be able to:

1. understand and discuss the physiological responses to acute and chronic exercise related to:
  - Skeletal muscle
  - Cardiovascular system
  - Pulmonary system
  - Endocrine system
  - Nervous system
  - Bioenergetics and exercise metabolism
  - Temperature and acid base regulation
  - Factors affecting performance
  
2. select the appropriate tests for evaluating different components of fitness and athletic performance and become familiar with the current recommendations for exercise prescription for improving fitness and sport-specific performance.

**Required Textbook**

S.K. Powers and E. T. Howley. ***Exercise Physiology: Theory and Application to Fitness and Performance***. 10<sup>th</sup> Ed., McGraw-Hill, St. Louis, MO. 2014. ISBN: 9781259870453.

Lectures and exams are primarily focused on the textbook. You are strongly encouraged to read the assigned chapters prior to attending class.

**Course Examinations and Grading**

**Exams:** There will be 4 exams and each is worth 25 points. Exams will consist of multiple-choice and true-false questions. Please bring extra pre-sharpened pencils. Exams will be administered during normal class meetings at our regular room and will last 50 minutes.

**Extra-credit quizzes:** There will be 4 unannounced quizzes worth 0.5 points each. Quizzes will focus on the material that was covered during the previous lecture. You must be present in class to earn extra credit from the quizzes. There will be NO make-up quizzes if you are absent.

**Grades:** Grades will be based on the points you earn from the exams and extra credit quizzes. The following grading scale will be used in this course:

| Letter Grade | Percent of Total Points |
|--------------|-------------------------|
| A            | 90-100%                 |
| B+           | 86-89%                  |
| B            | 80-85%                  |
| C+           | 76-79%                  |
| C            | 70-75%                  |
| D+           | 66-69%                  |
| D            | 60-65%                  |
| E            | 0-59%                   |

For more information on current UF grading policies, please visit the undergraduate catalog web page: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

### **Course Policies**

Requirements for class attendance and make-up exams in this course are consistent with university policies that can be found in the online catalog: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**Attendance:** Please make an effort to attend all lectures and to be on time. You must be present to take the unannounced quizzes to earn extra credit. There will be no make-up quizzes. In addition, missing class has a negative impact on learning, your exam scores and your final grade.

**Make-up Exams:** Unexcused absences on exam days will result in a zero on the exam. If you are ill or have an emergency that prevents you from taking the exam at the scheduled time, it is your responsibility to contact the instructor as soon as possible to try and schedule a make-up exam. Documentation of the illness or emergency will be required. Any make-up exams will be at the discretion of the instructor. Scheduling make-up exams is the responsibility of the student and should be done—if at all possible—*before* the scheduled exam.

**Accommodations:** Students requesting classroom accommodations must first register with the Dean of Students Office-Disability Resource Center. The Dean of Students Office will provide documentation to the student who must then present this documentation to the instructor when requesting accommodation. For optimal consideration, you must see the professor within the first three days of class. Please submit all exam requests within the first week of classes to ensure timely approval.

**Technology:** Computers and other electronic devices for note taking are welcome. However, surfing the web, checking your email, making Facebook posts, or anything of that nature is strictly prohibited. Any cell phone or other electronic device used during an exam/quiz will be considered a violation of the student honor code (i.e., cheating) and will also result in a zero for that exam/quiz. Recording of lectures is strictly prohibited. The content of this course may not be used for any commercial purpose. Students found in violation of these policies may be subject to discipline under UF's Conduct Code.

**Communication:** The best way to communicate with the instructor is face to face after class or by email ([ddchristou@ufl.edu](mailto:ddchristou@ufl.edu)). You are responsible for checking course postings on eLearning (CANVAS). All course grades will be posted on eLearning (CANVAS). Any discrepancies should be pointed out to the instructor as soon as possible, and before the last day of class.

**Evaluations:** Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

**Academic Honesty:** UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

**Counseling and Wellness Center:** Contact information for the Counseling and Wellness Center: <https://counseling.ufl.edu/> 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

### Tentative Schedule\*

\*The schedule is subject to change. Any changes will be announced in class and on Canvas.

| Week | Date       | Lecture Topic                                 | Book Chapter  |
|------|------------|-----------------------------------------------|---------------|
| 1    | M – Jan 7  | Course Introduction                           | Syllabus      |
|      | W – Jan 9  | Work/Power/Energy Expenditure                 | 1             |
|      | F – Jan 11 | Homeostasis                                   | 2             |
| 2    | M – Jan 14 | Bioenergetics                                 | 3             |
|      | W – Jan 16 | Bioenergetics                                 | 3             |
|      | F – Jan 18 | Bioenergetics/Exercise Metabolism             | 3, 4          |
| 3    | M – Jan 21 | <b>HOLIDAY – NO CLASS</b>                     |               |
|      | W – Jan 23 | Exercise Metabolism                           | 4             |
|      | F – Jan 25 | Exercise Metabolism                           | 4             |
| 4    | M – Jan 28 | Hormonal Response to Exercise                 | 5             |
|      | W – Jan 30 | Hormonal Response to Exercise                 | 5             |
|      | F – Feb 1  | Hormonal Response to Exercise                 | 5             |
| 5    | M – Feb 4  | Review                                        |               |
|      | W – Feb 6  | <b>EXAM 1 (25 pts)</b>                        | 1, 2, 3, 4, 5 |
|      | F – Feb 8  | No lecture. Attend seminar on March 21st 4 pm |               |
| 6    | M – Feb 11 | Neural Control of Movement                    | 7             |
|      | W – Feb 13 | Neural Control of Movement                    | 7             |
|      | F – Feb 15 | Neural Control of Movement/Skeletal Muscle    | 7, 8          |
| 7    | M – Feb 18 | Skeletal Muscle                               | 8             |
|      | W – Feb 20 | Skeletal Muscle                               | 8             |
|      | F – Feb 22 | Cardiovascular Adjustments to Exercise        | 9             |
| 8    | M – Feb 25 | Cardiovascular Adjustments to Exercise        | 9             |
|      | W – Feb 27 | Cardiovascular Adjustments to Exercise        | 9             |
|      | F – Mar 1  | Cardiovascular Adjustments to Exercise        | 9             |
| 9    | M – Mar 4  | <b>Spring Break - NO CLASS</b>                |               |
|      | W – Mar 6  | <b>Spring Break - NO CLASS</b>                |               |
|      | F – Mar 8  | <b>Spring Break - NO CLASS</b>                |               |
| 10   | M – Mar 11 | Review                                        |               |
|      | W – Mar 13 | <b>EXAM 2 (25 pts)</b>                        | 7, 8, 9       |
|      | F – Mar 15 | Pulmonary Adjustments to Exercise             | 10            |
| 11   | M – Mar 18 | Pulmonary Adjustments to Exercise             | 10            |
|      | W – Mar 20 | Acid-base Balance/Immune System               | 11, 6         |
|      | F – Mar 22 | Temperature Regulation                        | 12            |
| 12   | M – Mar 25 | Training Adaptations                          | 13            |
|      | W – Mar 27 | Training Adaptations                          | 13            |
|      | F – Mar 29 | Review                                        |               |

|    |            |                                                           |                    |
|----|------------|-----------------------------------------------------------|--------------------|
| 13 | M – Apr 1  | <b>EXAM 3 (25 pts)</b>                                    | 6, 10, 11, 12, 13  |
|    | W – Apr 3  | Tests to Evaluate Fitness                                 | 15                 |
|    | F – Apr 5  | Exercise Prescription                                     | 16                 |
| 14 | M – Apr 8  | No lecture. Attend seminar on March 28 <sup>th</sup> 4 pm |                    |
|    | W – Apr 10 | Factors Affecting Performance                             | 19                 |
|    | F – Apr 12 | Laboratory Assessment                                     | 20                 |
| 15 | M – Apr 15 | Training for Performance                                  | 21                 |
|    | W – Apr 17 | Training for Performance                                  | 21                 |
|    | F – Apr 19 | Review                                                    |                    |
| 16 | M – Apr 22 | <b>EXAM 4 (25 pts)</b>                                    | 15, 16, 19, 20, 21 |
|    | W – Apr 24 | TBA                                                       |                    |