

## PHYSIOLOGY OF EXERCISE & TRAINING

APK 3110C ~ 3 CREDITS ~ SPRING 2020

**INSTRUCTOR:** Anna Gardner, Ph.D.  
Office: 106-H  
Office Phone: 352-294-1763  
Email: [akgardner@ufl.edu](mailto:akgardner@ufl.edu)  
Preferred Method of Contact: email

**OFFICE HOURS:** MW 9 – 10:30 am or by appointment

**MEETING TIME/LOCATION:**

MWF Period 6 (12:50 – 1:40 pm) FLG 285

**COURSE DESCRIPTION:** Survey in exercise physiology which provides an overview of the acute and chronic responses to exercise. Particular attention is placed on understanding muscle bioenergetics and metabolism as well as the cardiopulmonary responses to exercise. Special topics include exercise testing, training technologies and exercise in hot and cold environments.

**PREREQUISITE KNOWLEDGE AND SKILLS:** APK 2105C with minimum grade of C

**REQUIRED AND RECOMMENDED MATERIALS:**

**Required Textbook:** *Exercise Physiology: Theory and Application to Fitness and Performance* by Powers & Howley (ISBN: 9781259870453). 10<sup>th</sup> edition.

Additional materials will be provided on the course website via Canvas. Students will be informed when to bring materials to class OR materials will be provided by the instructor.

**COURSE FORMAT:** Students will attend live lectures two times each week. Lecture slides will be available to students to print **before** coming to lecture.

## **COURSE LEARNING OBJECTIVES:**

A. To understand the physiological responses to acute and chronic exercise in the context of:

- *Skeletal muscle*
- *Skeletal muscle bioenergetics and metabolism*
- *Cardiovascular system*
- *Pulmonary system*
- *Acid base-balance during exercise*
- *Limiting factors to exercise performance*
- *Exercise testing for health and performance*

B. To 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.

## **COURSE AND UNIVERSITY POLICIES:**

**ATTENDANCE POLICY:** Attendance is not required; however, **students will be responsible for all material presented in class in addition to any material posted on the class website. Failure to attend class will almost certainly result in a significantly lowered grade.** Exam questions will be derived from lecture material as presented in class, assigned readings if any, and any class handouts posted on the class website.

**PERSONAL CONDUCT POLICY:** 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 (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-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 the instructor in this class.

Cheating on exams in any way will not be tolerated. Cheating includes, but is not limited to: attempting to look or looking at another student's exam or answers; or allowing another student to look at one's exam or answers. If a student is made aware of cheating, approached by another student to conspire to cheat, or concerned that another student may be attempting to look at his/her exam or answers, it is that

student's responsibility to notify the instructor to avoid implication in cheating incidents. **Any student caught cheating on any exam will receive a zero for that exam. There will be no exceptions. Additionally, the instructor may assign a failing grade for the course.** In all cases, students will be subject to the regulations and consequences, which can include probation or expulsion from the University, outlined in the Student Handbook.

In addition:

1. Phones must be turned to silent or off during all lectures and exams. Vibrate and quiet settings are not acceptable. They should never be visible during an exam and, if seen, will be looked upon as an attempt to use it resulting in the consequences shown below in "Academic Honesty".
2. Students will be expected to show respect to the instructors and all students in the class. Students behaving disrespectfully (talking during lectures, making inappropriate or threatening statements to instructor or students, using phones in class, etc.) will be dismissed from the lecture or exam at hand. All university regulations governing student behavior will be enforced.
3. Lectures will begin at the scheduled times. Students will be expected to arrive on-time, and in the event of tardiness, to enter the room with as little disruption as possible.
4. No audio or video recordings may be made of any part of this course without written consent by the instructor who is administering that part of the course.
5. Lecture notes posted on the class website are the property of the instructor. They are posted solely for students in this course and solely to facilitate note-taking and studying. No part of the materials may be re-distributed, reproduced, or used for any purpose other than note-taking and studying.

**EXAM MAKE-UP POLICY: Unexcused absences/availability for exams will result in a zero on the exam.** Students who are ill or have an emergency that prevents from taking the exam during the time available are responsible for contacting the instructor as soon as possible. **Make-up exams are offered at the discretion of the instructor given that there is a medical, family, or other emergency that deems the need for a make-up.** Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

A student experiencing an illness should visit the UF Student Health Care Center to seek medical advice and obtain documentation. If you have an illness, family emergency or death, please contact the Dean of Students Office ([www.dso.ufl.edu](http://www.dso.ufl.edu)) and follow the DSO Care Team procedures for documentation and requesting a make-up assignment (<https://www.dso.ufl.edu/care/courtesy-letters/>). The DSO will contact the instructor.

Do not provide any documentation to the instructor regarding illness or family emergency. This is your personal and protected information. The DSO is qualified to receive and verify the documents you provide. The instructor will follow the recommendations from the DSO.

Canvas: A ticket number received from UFIT Helpdesk must accompany requests for make-ups due to technical issues (see Academic Resources below). The ticket number will document the time and date of the problem. If the time and date are past the assignment deadline, the request may not be granted. You must e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with the university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**ACCOMMODATING STUDENTS WITH DISABILITIES:** Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation within the first three (3) days of class. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

**COURSE EVALUATIONS:** Students in this class are participating in GatorEvals. This evaluation system is designed to be more informative to instructors so that teaching effectiveness is enhanced and to be more seamlessly linked to UF's CANVAS learning management system. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Thank you for serving as a partner in this important effort.

## GETTING HELP:

### Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 392-1161
- University Police Department, 392-1111 (or 9-1-1 for emergencies)  
<http://www.police.ufl.edu/>

## Academic Resources

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

## GRADING:

**Exams:** There will be four exams given throughout the course of the semester, including the final exam. Each exam will be worth 50 points. You will be told what chapters each exam will cover. ***The final exam will be cumulative*** and include all material covered during the semester. Exams will consist of multiple choice, true/false, and short answer questions.

All students must be present at the scheduled exam prior to any student completing the exam and leaving the examination room. Once any student has completed the exam and left the exam room, no late-arriving students will be admitted to the exam.

**Final Grades:** Your final course grade will consist of the evaluations listed above. No extra-credit assignments will be offered in this course. There will be no exceptions. Students whose percentage grades lie in the decimal points between two letter grades may be considered for the higher grade based on their performance in the class.

**Students should not email the instructor requesting consideration for a higher grade or additional extra-credit. There will be no additional extra-credit provided in any circumstance.** This is a departmental policy and outside the control of the instructor.

### Assessments:

Exam #1	50 points
Exam #2	50 points
Exam #3	50 points
<u>Exam #4</u>	<u>50 points</u>
Total:	200 points

**GRADING SCALE:** Any discrepancies with points displayed in the Canvas gradebook should be pointed out to the instructor *before* the final exam. **There is no curve for this course.** More detailed information regarding current UF grading policies can be found here: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>. *Any requests for additional extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.*

Grading Scale (%):

A 93.0-100	A- 90.0-92.9
B+ 87.0-89.9	B 83.0-86.9
B- 80-82.9	C+ 77.0-79.9
C 73.0-76.9	C- 70.0-72.9
D+ 67.0-69.9	D 63.0-66.9
D- 60.0-62.99	E Below 60.0

## SUCCESS AND STUDY TIPS:

- a. Use reading from the text to supplement what is covered in the lecture
- b. Begin studying lecture material *immediately* after the first lecture.
- c. If there was something in the textbook that was not in the lecture, you are not expected to know it.
- d. Do not fall behind. This course covers a lot of information at a fast pace. You will easily become overwhelmed if you procrastinate. Avoid studying at the last minute and cramming for exams.
- e. Check Canvas announcements/emails daily. I will post important information as announcements.
- f. Prior to exams, create your own list of questions from the lecture material and use these to study.

**WEEKLY COURSE SCHEDULE:**

Every effort will be made to adhere to the tentative lecture topics and exam dates listed. However, topic dates and exam dates are subject to change by the instructor with advance notice to students.

<b>Date</b>	<b>Topic</b>	<b>Text Chapter(s)</b>
Jan 6 (M)	Introduction to Course & Syllabus Review	
Jan 8 (W)	History of Exercise Physiology	0
Jan 10 (F)	Common Measurements	1
Jan 13 (M)	Common Measurements cont'd (Calculation Activity)	1
Jan 15 (W)	Control of Internal Environment	2
Jan 17 (F)	Bioenergetics	3
Jan 20 (M)	Bioenergetics cont'd	3
Jan 22 (W)	<b>No Class- MLK, JR. DAY</b>	
Jan 24 (F)	Exercise Metabolism	4
Jan 27 (M)	Exercise Metabolism cont'd	4
Jan 29 (W)	Cell Signaling & Hormonal Response to Exercise	5
Jan 31 (F)	Cell Signaling & Hormonal Response to Exercise cont'd	5
Feb 3 (M)	<b>No Class- Study for Exam #1</b>	
Feb 5 (W)	<b>Exam #1</b>	0-5
Feb 7 (F)	The Nervous System	7
Feb 10 (M)	The Nervous System cont'd	7
Feb 12 (W)	Skeletal Muscle Structure & Function	8
Feb 14 (F)	<b>No Class- SEACSM Meeting in Jacksonville</b>	
Feb 17 (M)	Skeletal Muscle Structure & Function cont'd	8
Feb 19 (W)	Circulatory Response to Exercise	9
Feb 21 (F)	Circulatory Response to Exercise cont'd	9
Feb 24 (M)	<b>No Class- Study for Exam #2</b>	
Feb 26 (W)	<b>Exam #2</b>	7-9
Feb 28 (F)	<b>No Class</b>	
Mar 2 – 6	<b>No Class- SPRING BREAK WEEK</b>	
Mar 9 (M)	Respiration during Exercise	10
Mar 11 (W)	Respiration during Exercise cont'd	10
Mar 13 (F)	Acid-Base Balance	11
Mar 16 (M)	Temperature Regulation	12
Mar 18 (W)	Temperature Regulation cont'd (may start Chapter 13 also)	12
Mar 20 (F)	Physiology of Training	13
Mar 23 (M)	<b>No Class- Study for Exam #3</b>	
Mar 25 (W)	<b>Exam #3</b>	10-13
Mar 27 (F)	Exercise Tests to Evaluate CV Fitness	15
Mar 30 (M)	Exercise Tests to Evaluate CV Fitness cont'd	15
Apr 1 (W)	Exercise Prescription	16
Apr 3 (F)	Exercise Prescription Activity	16
Apr 6 (M)	Special Populations	17

Apr 8 (W)	Special Populations cont'd	17
Apr 10 (F)	Nutrition & Body Composition	18
Apr 13 (M)	Nutrition & Body Composition cont'd	18
Apr 15 (W)	Review for Final Exam	
Apr 17 (F)	<b>No Class</b>	
Apr 20 (M)	Review for Final Exam	
Apr 22 (W)	Review for Final Exam	
Apr 24 (F)	<b>No Class- READING DAY</b>	
Apr 29 (W)	<b>Cumulative Final Exam 12:30 – 2:30 pm</b>	All chapters previously covered