

## PHYSIOLOGY OF EXERCISE & TRAINING

APK 3110C ~ 3 CREDITS ~ SPRING 2021

**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

**\*PLEASE NOTE:** Office hours will be held virtually. Please refer to the Zoom meeting links in the weekly Canvas announcements.

**MEETING TIME/LOCATION:**

**Class number 26087 Section number 938A**

ONLINE: Since lectures will be pre-recorded, you do not need to be available during a specific class time.

**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:**

**Recommended Textbook:** *Exercise Physiology: Theory and Application to Fitness and Performance* by Powers & Howley 11<sup>th</sup> edition e-book.

Additional materials such as handouts, lectures, and worksheets will be provided on the course website via Canvas.

**COURSE FORMAT:** Lectures will be pre-recorded and available prior to the day each topic is covered. Students will have the liberty to work at their own pace up until each of the exams. In other words, you are welcome to work ahead on chapters or stick to the course schedule, just as long as you have covered the necessary material prior to each exam. **Whatever you do, DO NOT FALL BEHIND!**

**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:** Since lectures will be pre-recorded, you do not need to be available during the specific class time. **Keep in mind, students will be responsible for all material presented in the lectures, as well as any material posted on the class website.** Exam questions will be derived from lecture material, 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/scr/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. Because all exams will be conducted online, *Honorlock* will be utilized as a proctoring service. **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. Students will be expected to show respect to the instructors and all students in the class. This includes any comments made on class discussion boards. All university regulations governing student behavior will be enforced.
2. Lecture recordings and 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 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 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.

**ACCOMMODATING STUDENTS WITH DISABILITIES:** Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting their Get Started page at <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

**COURSE EVALUATIONS:** Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## 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](mailto: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/>

## INCLUSION, DIVERSITY, EQUITY, AND ACCESSIBILITY RESOURCES

For suggestions or concerns related to IDEA, please reach out to any of the following:

- Dr. Leo Ferreira, APK IDEA Liaison, [ferreira@hhp.ufl.edu](mailto:ferreira@hhp.ufl.edu)
- Dr. Rachael Seidler, APK Graduate Coordinator, [rachaelseidler@ufl.edu](mailto:rachaelseidler@ufl.edu)
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, [jahlgren@ufl.edu](mailto:jahlgren@ufl.edu)

## 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 and true/false questions. Exam dates are listed in the syllabus on the course schedule page. Exams will be accessed via Canvas and use Honorlock proctoring services. Students will have from 7:00 am to 11:59 pm to access the exam. Once a student starts the exam, he/she will have 65 minutes to complete the exam. Be sure to start the exam with enough time left to complete it. If you are still taking the exam at 11:59 pm, it will automatically end and you will not be given additional time to complete exam questions. **Note: It is YOUR responsibility to ensure adequate, reliable internet access for the exam. Likewise, it is YOUR responsibility to ensure there are no technological equipment issues during the exam. If your computer breaks, shuts down, etc while taking the exam, do whatever you can to reaccess the exam. You will NOT be given the opportunity for a make-up, extra credit, etc because of internet/technological issues during the exam.**

**Extra credit:** There will be TWO extra credit opportunities provided throughout the semester. One will be based on review of a scientific manuscript and the other will be a case study. The extra credit assignments are each worth 5 points. The extra credit opportunities are completely optional and are not required as a part of this course. Extra credit assignments must be typed, using 12-point font in Arial or Times New Roman. They must be submitted via Canvas. **The extra credit assignments are due no later than Wednesday, December 2 at 11:59 pm. There will be no exceptions made for late submissions.**

**Final Grades:** Your final course grade will consist of the evaluations listed above, as well as the extra credit opportunities (should you choose to complete them). **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

Extra Credit (optional):

Article Review	5 points
Case Study	5 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 mock exam 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>Week</b>	<b>Dates</b>	<b>Topic(s)</b>	<b>Text Chapter(s)</b>
1	1/11 – 1/15	Introduction to Course History of Exercise Physiology Common Measurements (Calculation Activity)	0, 1
2	1/20 – 1/22 (no class 1/18 for MLK, Jr Day)	Control of Internal Environment Bioenergetics	2, 3
3	1/25 – 1/29	Exercise Metabolism Cell Signaling & Hormonal Response to Exercise	4, 5
4	2/1 – 2/5	Cell Signaling & Hormonal Response to Exercise (cont'd) <b>EXAM #1 (FRIDAY 2/5: Ch 0-5)</b>	5
5	2/8 – 2/12	The Nervous System	7
6	2/15 – 2/19	Skeletal Muscle: Structure & Function	8
7	2/22 – 2/26	Circulatory Response to Exercise	9
8	3/1 – 3/5	<b>EXAM #2 (MONDAY 3/1: Ch 7-9)</b> Respiration during Exercise	10
9	3/8 – 3/12	Acid- Base Balance Temperature Regulation	11, 12
10	3/15 – 3/19	Physiology of Training <b>EXAM #3 (FRIDAY 3/19: Ch 10-13)</b>	13
11	3/22 – 3/26	<b>NO CLASS THIS WEEK</b>	
12	3/29 – 4/2	Exercise Tests to Evaluate Cardiovascular Fitness	15
13	4/5 – 4/9	Exercise Prescription Special Populations	16, 17

14	4/12 – 4/16	Nutrition & Body Composition <b>Extra Credit Due by Wednesday 4/14!!!</b>	18
15	4/19 – 4/23	<b>NO CLASS- Study week</b>	
Finals week	4/28	<b>Cumulative Final exam (12:30 – 2:30 pm)</b>	