

# Physiology of Exercise & Training

APK3110C | Class # 18290 | 3 Credits | Fall 2023

## Course Info

### INSTRUCTOR

**Anna Gardner, PhD**  
Office: FLG 106-H  
Email: [akgardner@ufl.edu](mailto:akgardner@ufl.edu)

### OFFICE HOURS

MW 10:30 am – 12 noon or by appointment  
\*PLEASE NOTE: Office hours will be held in person unless otherwise indicated by the instructor.

### MEETING TIME/LOCATION

**Class number 18290 Section number 089F**  
MWF Period 7 1:55 – 2:45 pm FLG 230

## 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 12th edition e-book.

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

## COURSE FORMAT

Students will attend live lectures three 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 & 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 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 & 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/>

## 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. ***The final exam will be cumulative*** and includes all material covered during the semester. Exams will consist of multiple choice, fill in the blank, and true/false questions. Exam dates are listed in the syllabus on the course schedule page. 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.

**Calculation Activity:** Students will complete a calculation activity in line with learning from Chapter 1. The document for this assignment is located in the Pages tab under the Chapter 1 Calculation Activity Assignment folder. This assignment is worth 10 points and must be submitted to Canvas by Friday 9/1.

**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, November 29 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:  
Calc Activity 10 points

Extra Credit (optional):  
Article Review 5 points

Exam #1	50 points
Exam #2	50 points
Exam #3	50 points
Exam #4	50 points
Total:	210 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

**Note: A grade of C or better is required to “pass” this course. A grade of C- or lower is insufficient.**

## Weekly Course Schedule

Week	Dates	Topic(s)
1	8/23-8/25	Introduction to Course Chapter 0: History of Exercise Physiology
2	8/28-9/1	Chapter 1: Common Measurements (Calculation Activity) Chapter 2: Control of Internal Environment <b>Calculation Activity Due Friday 9/1!</b>
3	9/4-9/8	<b>NO CLASS MONDAY 9/4 - LABOR DAY</b> Chapter 2: Control of Internal Environment (cont'd) Chapter 3: Bioenergetics
4	9/11-9/15	Chapter 4: Exercise Metabolism Chapter 5: Cell Signaling & Hormonal Response to Exercise
5	9/18-9/22	Chapter 5: Cell Signaling & Hormonal Response to Exercise (cont'd)
6	9/25-9/29	<b>EXAM #1 (MONDAY 9/25: Ch 0-5)</b> Chapter 7: The Nervous System

7	10/2-10/6	<b>NO CLASS FRIDAY 10/6 - HOMECOMING</b> Chapter 8: Skeletal Muscle: Structure & Function
8	10/9-10/13	Chapter 9: Circulatory Response to Exercise
9	10/16-10/20	<b>EXAM #2 (MONDAY 10/16: Ch 7-9)</b> Chapter 10: Respiration during Exercise
10	10/23-10/27	Chapter 10: Respiration during Exercise (cont'd) Chapter 11: Acid- Base Balance Chapter 12: Temperature Regulation
11	10/30-11/3	Chapter 12: Temperature Regulation (cont'd) Chapter 13: Physiology of Training
12	11/6-11/10	<b>EXAM #3 (WEDNESDAY 11/8: Ch 10-13)</b> <b>NO CLASS FRIDAY 11/10 - VETERANS DAY</b>
13	11/13-11/17	Chapter 15: Exercise Tests to Evaluate Cardiovascular Fitness Chapter 16: Exercise Prescription
14	11/20-11/24	<b>NO CLASS THIS WEEK – HAPPY THANKSGIVING!</b>
15	11/27-12/1	Chapter 17: Special Populations Chapter 18: Nutrition & Body Composition <b>Extra Credit Due Wednesday 11/29!!!</b>
16	12/4-12/8	<b>NO CLASS THIS WEEK – STUDY FOR FINAL</b>
Finals week	12/14	<b>Cumulative Final exam 10 am – 12 noon</b>

### SUCCESS AND STUDY TIPS

- Use reading from the text to supplement what is covered in the lecture
- Snowball lecture material
- If there was something in the textbook that was not in the lecture, you are not expected to know it.

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- 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.
- g. Utilize GroupMe (APK 3110C Phys of Exer) to ask questions, organize study sessions, etc.