

## PHYSIOLOGY OF EXERCISE & TRAINING

APK 3110C ~ 3 CREDITS ~ SUMMER B 2021

**INSTRUCTOR:** Anna Gardner, Ph.D.  
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Preferred Method of Contact: email

**OFFICE HOURS\*:** Every Tues, Wed, and Thurs from 10 – 11:30 am or by appointment  
**LINK TO JOIN OFFICE HOURS:**  
<https://ufl.zoom.us/j/93846326738?pwd=RVdMT0hPSnozSFVmQVFPYU5sWEoxQT09>

**MEETING TIME/LOCATION:**

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

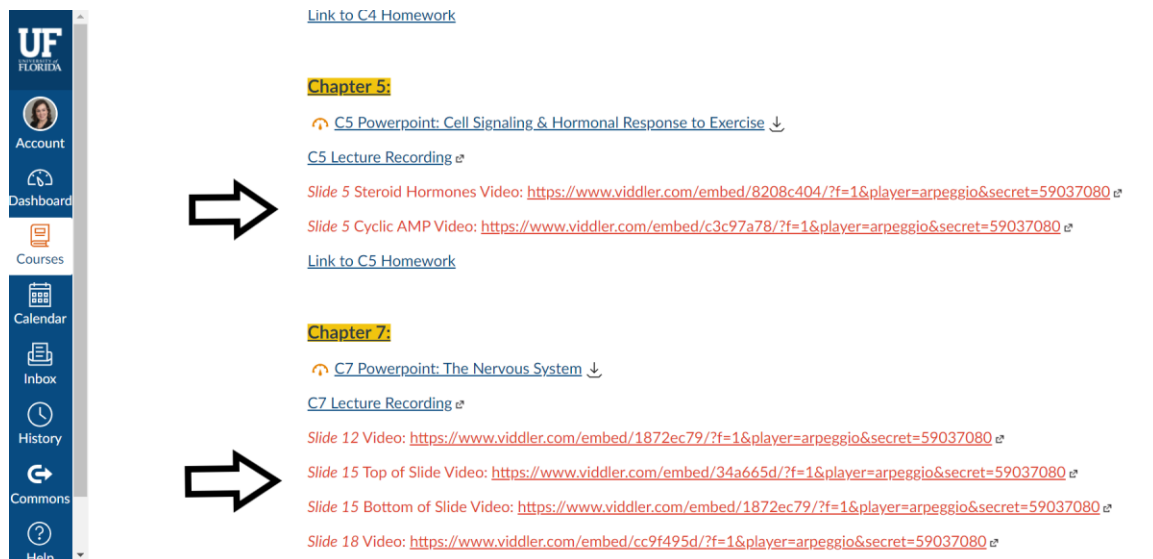
**REQUIRED AND RECOMMENDED MATERIALS:**

**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. 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!**

**\*Note:** There are several videos included throughout the recorded lectures. Unfortunately, the audio for these videos doesn't always come through clearly. Therefore, I have included direct links to each video in the same spot as the chapter lectures and Powerpoints (see image below for example).



The screenshot shows the Canvas LMS interface. On the left is a navigation menu with icons for Account, Dashboard, Courses, Calendar, Inbox, History, Commons, and Help. The main content area displays links for Chapter 5 and Chapter 7. Two large white arrows point from the navigation menu to the content sections.

[Link to C4 Homework](#)

**Chapter 5:**

[C5 Powerpoint: Cell Signaling & Hormonal Response to Exercise](#) ↓

[C5 Lecture Recording](#) ↗

Slide 5 Steroid Hormones Video: <https://www.viddler.com/embed/8208c404/?f=1&player=arpeggio&secret=59037080> ↗

Slide 5 Cyclic AMP Video: <https://www.viddler.com/embed/c3c97a78/?f=1&player=arpeggio&secret=59037080> ↗

[Link to C5 Homework](#)

**Chapter 7:**

[C7 Powerpoint: The Nervous System](#) ↓

[C7 Lecture Recording](#) ↗

Slide 12 Video: <https://www.viddler.com/embed/1872ec79/?f=1&player=arpeggio&secret=59037080> ↗

Slide 15 Top of Slide Video: <https://www.viddler.com/embed/34a665d/?f=1&player=arpeggio&secret=59037080> ↗

Slide 15 Bottom of Slide Video: <https://www.viddler.com/embed/1872ec79/?f=1&player=arpeggio&secret=59037080> ↗

Slide 18 Video: <https://www.viddler.com/embed/cc9f495d/?f=1&player=arpeggio&secret=59037080> ↗

### 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 a 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/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. 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:** Students unable to complete an exam by the assigned due date outlined in this syllabus may request to complete the exam early. **Due to the expedited nature of this course, no make-up exams will be allowed.** 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>.

**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:**

**Weekly Homework Quizzes**– A 5-point “quiz” is assigned for each chapter as homework. The homework quizzes consist of multiple choice and true/false questions. Each homework quiz contains questions from that chapter’s lecture only, they are not cumulative. There is no time limit for completing each quiz, but they must be completed in a single sitting. You also have as many attempts as necessary for each quiz (yes, that means you can retake each quiz until you get all answers right!). These homework quizzes are designed to serve as practice exam questions and a quick test of your comprehension of the material.

**Exams:** There will be three exams given throughout the course of the semester, including the final exam. All 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.

**Exams 1 and 2:** Each will be worth 50 points and consist of 40 to 50 questions. You will be told what chapters each exam will cover. Once a student starts the exam, he/she will have 65 minutes to complete the exam. Students will have from 7:00 am to 11:59 pm on the scheduled date to access 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.

**Exam 3 (final exam):** **The final exam will be cumulative** and include all material covered during the semester. The final exam will be worth 75 points and consist of 75 questions. Once a student starts the final exam, he/she will have 120 minutes to complete the exam. Students will have from 7:00 am to 5:00 pm on the scheduled date to access the exam (NOTE: THIS IS A DIFFERENT SUBMISSION TIME FROM EXAMS 1 & 2). Be sure to start the exam with enough time left to complete it. If you are still taking the exam at 5:00 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.**

**Summarized Exam Schedule** (This is copied directly from the course schedule)

Exam	Due Date	Chapters Covered
1	Thurs 7/8 by 11:59 pm	1, 2, 3, 4
2	Thurs 7/22 by 11:59 pm	5, 7, 8, 9
Final	Fri 8/6 by 5:00 pm	Cumulative- ALL CHAPTERS

**Optional extra credit:** There will be ONE extra credit opportunity provided throughout the semester. It is based on review of a scientific manuscript and worth a total of 5 points. The extra credit opportunity is completely optional and not required as a part of this course. Extra credit must be typed, using 12-point font and submitted via Canvas.

**The extra credit assignments is due no later than Wednesday, August 4th 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 opportunity (should you choose to complete it). **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      75 points  
Homework    60 points  
**Total:        235 points**

Extra Credit (optional):

Article Review      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. This course is extremely expedited! We cover all of the material in a normal semester but in half the time! Therefore, you must be extremely dedicated and diligent in order to stay on top of the coursework and do well on the exams. It is going to seem like a lot of work because it is a lot of work!
- b. If you choose to purchase the recommended book, use reading from the text to supplement what is covered in the lecture. Just be aware that you will NOT be tested on material in the book that is NOT covered in lecture.
- c. Begin studying lecture material *immediately* after the first lecture.
- 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>
1	6/28 – 7/2	Ch. 1 <i>Common Measurements</i> Ch. 2 <i>Control of Internal Environment</i> Ch. 3 <i>Bioenergetics</i> <b>Ch 1-3 HOMEWORK DUE 7/3</b>
2	7/5 – 7/9 (No class 7/5 for Independence Day)	Ch. 4 <i>Exercise Metabolism</i> <b>(Ch 4 HOMEWORK DUE 7/10)</b> <b>EXAM #1 (THURS 7/8: Ch 1-4)</b> Ch. 5 <i>Cell Signaling &amp; Hormonal Response to Exercise</i>
3	7/12 – 7/16	Ch. 5 (cont'd) <i>Cell Signaling &amp; Hormonal Response to Exercise</i> Ch. 7 <i>The Nervous System</i> Ch. 8 <i>Skeletal Muscle: Structure &amp; Function</i> <b>Ch 5, 7, 8 HOMEWORK DUE 7/17</b>
4	7/19 – 7/23	Ch. 9 <i>Circulatory Response to Exercise</i> <b>EXAM #2 (THURS 7/22: Ch 5, 7-9)</b> Ch. 10 <i>Respiration during Exercise</i> <b>Ch 9, 10 HOMEWORK DUE 7/24</b>
5	7/26 – 7/30	Ch. 11 <i>Acid- Base Balance</i> Ch. 12 <i>Temperature Regulation</i> <b>Ch 11, 12 HOMEWORK DUE 7/31</b>
6	8/2 – 8/6	Ch. 13 <i>Physiology of Training</i> <b>Ch 13 HOMEWORK DUE 8/5</b> <b>Extra Credit Due by Wednesday 8/4!!!</b> <b>CUMULATIVE FINAL EXAM due by 5 pm FRIDAY 8/6</b>