

Physiology of Exercise & Training

APK3110 | Class # 10609 | 3 Credits | Fall 2022

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Course Info

INSTRUCTOR

Dr. Demetra Christou, Associate Professor
Office: 118 FLG
Office Phone: 352-294-1715
Email: ddchristou@ufl.edu via Canvas
Preferred Method of Contact: **email via CANVAS**

OFFICE HOURS

W 3 to 4 or by appointment

MEETING TIME/LOCATION

FLG 270 MWF period 9 (4:05 PM – 4:55 PM)

COURSE DESCRIPTION

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..

PREREQUISITE KNOWLEDGE AND SKILLS

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.

REQUIRED AND RECOMMENDED MATERIALS

Exercise Physiology: Theory and Application to Fitness and Performance by Powers & Howley 11th edition.

Class materials will also include PowerPoint slides, research articles, and other online resources. These materials will be made available on CANVAS. Students are responsible for reading all assigned materials.

COURSE FORMAT

The course will entail synchronous in-person instruction on the scheduled days/times. *There will be no recordings of the lectures posted.* Attendance of all scheduled meetings in person is required. More detailed information will be made available on CANVAS.

COURSE LEARNING OBJECTIVES:

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

1. 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 discuss the current recommendations for exercise prescription.

Course & University Policies

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

ATTENDANCE POLICY

Students are expected to attend class person on the scheduled days/times. Please note: The University has specific reasons that are acceptable for missing class which apply to both undergrad and grad students:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

PERSONAL CONDUCT POLICY

Students are expected to exhibit behaviors that reflect highly upon themselves and our University. 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, students are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If there are any questions or concerns, students should consult the instructor of this class.

EXAM AND QUIZ MAKE-UP POLICY

Unexcused absences on exam or quiz days will result in a zero on the exam or quiz. The University has specific reasons that are acceptable for missing class:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. Any make-up exam 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. A student experiencing an illness should visit the UF Student Health Care Center or their preferred healthcare provider 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) and follow the DSO Care Team procedures for documentation and submission of a request for make-up assignment (<https://care.dso.ufl.edu/instructor-notifications/>). 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.

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. For optimal consideration, students must see the instructor within the first week of class.

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/>.

TECHNOLOGY CONSIDERATIONS

Instruction will be delivered in person during the scheduled days/times. Students are required to bring their laptop/tablet to class. Surfing the web, checking your email, making Facebook posts, or anything of that nature is unacceptable and strictly prohibited. Please keep your cell phone on silent. Recording of student presentations, in class assessments, private conversations between students in the class or between a student and the faculty during a class session is strictly prohibited. The content of this course may not be used for any commercial purpose or published without the written consent of the instructor. To “publish” means to share, transmit, circulate, distribute, or provide access to material, regardless of format or medium, to another person, including but not limited to another student within the same class section. Students found in violation of these policies will be subject to discipline under UF’s Conduct Code.

Getting Help

HEALTH & WELLNESS

- U Matter, We Care: If you or a friend is in distress, please contact 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/>

INCLUSION, DIVERSITY, EQUITY, AND ACCESSIBILITY RESOURCES

I am committed to providing a learning environment that supports inclusion, diversity, equity and accessibility (IDEA) and promotes respect for individuals of all identities. For suggestions or concerns related to IDEA, please reach out to me or any of the following:

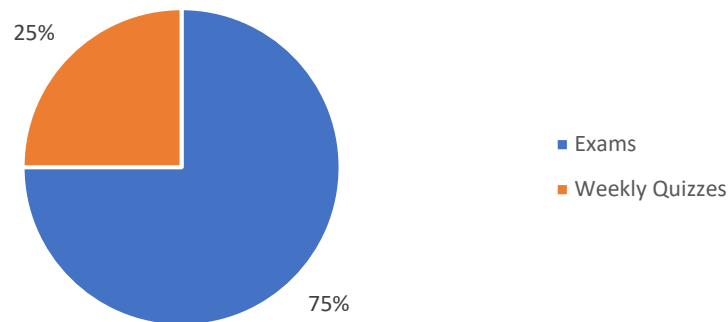
- Dr. Linda Nguyen, APK IDEA Liaison, linda.nguyen@hhp.ufl.edu
- Dr. Rachael Seidler, APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, jahlgren@ufl.edu

Grading

Provide students with an overview of how students will be assessed in this course. A table like the one below is recommended, but not necessary—as long as it is clear what percent of the total grade each component represents. Below the table, provide more detailed descriptions and/or grading rubrics for each component. This table is what we use for anatomy, and I've left the related descriptions as examples.

Evaluation Components	% of Total Grade
Exams 1, 2 and 3 (25% each)	75%
Quizzes	25%

Grade Breakdown



Exams – Exam questions are generated by the course instructor and are based on the lecture notes. Questions will be multiple choice and true/false. Students will take exams on their laptop in the same room where weekly meetings are held and will be allowed 50 minutes to complete the exam; Lockdown Browser will be needed.

Weekly Quizzes – quizzes will focus on the material presented during lectures and the reading assignments. They will consist of short essay questions, multiple choice, true/false, fill in the blank, or matching. Quizzes will be scheduled on Fridays and will be administered during normal class time, but some quizzes will be take-home. Detailed information will be provided in advance on CANVAS. Students will be allowed to drop their lowest quiz grade.

GRADING SCALE

Exam scores will be uploaded directly on the CANVAS gradebook. If you feel there is an error in grading, please contact the instructor as soon as possible. The following grading scale will be used in this course:

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	90-100%	4.0
A-		3.67
B+	87-89%	3.33
B	80-86%	3.0
B-		2.67
C+	77-79%	2.33
C	70-76%	2.0
C-		1.67
D+	67-69%	1.33
D	60-66%	1.0
D-		0.67
E	0-59%	0

More detailed information regarding current UF grading policies can be found here: [https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.](https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/)"

Course Schedule*

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

Week	Lecture Topic	Book Chapter
1	Course Introduction	Syllabus
	Common measurements	1
2	Homeostasis	2
	Bioenergetics	3
3	HOLIDAY – NO CLASS on Monday Sept 5	
	Bioenergetics/Exercise Metabolism	3, 4
4	Exercise Metabolism	4
5	Review (Monday Sept 19)	
	EXAM 1 (Wednesday Sept 21)	1, 2, 3, 4
6	Hormonal Response to Exercise	5
7	Neural Control of Movement	7
8	Skeletal Muscle	8
9	Cardiovascular Adjustments to Exercise	9
10	Cardiovascular Adjustments to Exercise	9
	Review (Wednesday October 26)	
	EXAM 2 (Friday October 28)	5, 7, 8, 9
11	Pulmonary Adjustments to Exercise	10

12	Acid-base Balance	11
	Temperature Regulation	12
	Holiday - NO CLASS on Friday Nov 11	
13	Training Adaptations to Aerobic Exercise	13
	Training Adaptations to Resistance Exercise	14
14	Exercise Prescription	16
	Thanksgiving Break NO CLASS on Nov 23 through Nov 25	
15	Training for Performance	20
16	Review (Monday Dec 5)	
	EXAM 3 (Wednesday Dec 7)	10-14, 16, 20

SUCCESS AND STUDY TIPS

- Read the assigned book chapters before coming to lecture
- Study the lecture notes after each lecture
- Create your own questions and quiz yourself often