UF Department of Applied Physiology and Kinesiology
College of Health and Human Performance
UNIVERSITY of FLORIDA

Physiology of Exercise & Training

APK3110 | Class # 26468 | 3 Credits | Fall 2024

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Course Info

INSTRUCTOR

Dr. Demetra Christou, Associate Professor
Office: 142 FLG
Office Phone: 352-294-1715
Email: ddchristou@ufl.edu
Preferred Method of Contact: **CANVAS**

OFFICE HOURS

2 hours/week to be posted on CANVAS

MEETING LOCATION/TIME

LAR 239/ Tuesday periods 7 (1:55 PM – 2:45 PM)
LAR 239/ Thursday period 7-8 (1:55 PM – 3:50 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, and other resources. These materials will be made available on CANVAS. Students are responsible for studying 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 in 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. University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course.

EXAM MAKE-UP POLICY

Unexcused absences on exam days will result in a zero on the exam. 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 to be provided to the instructor.

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 encouraged 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. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Getting Help

HEALTH & WELLNESS

- ***U Matter, We Care:*** If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- ***Counseling and Wellness Center:*** Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- ***Student Health Care Center:*** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- ***University Police Department:*** Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- ***UF Health Shands Emergency Room / Trauma Center:*** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; or visit the UF Health Emergency Room and Trauma Center website.
- ***GatorWell Health Promotion Services:*** For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

ACADEMIC RESOURCES

- ***E-learning technical support***: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- ***Career Connections Center***: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- ***Library Support***: Various ways to receive assistance with respect to using the libraries or finding resources.
- ***Teaching Center***: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- ***Writing Studio***: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- ***Student Complaints & Grievances***: Students are encouraged to communicate first with the involved person(s), but here is more information on the appropriate reporting process.

APK ADMINISTRATORS

For suggestions or concerns related to APK courses or programming, please reach out to any of the following:

- Dr. David Vaillancourt (he/him), APK Department Chair, vcourt@ufl.edu
- Dr. Demetra Christou (she/her), APK Department Vice Chair, ddchristou@hhp.ufl.edu
- Dr. Steve Coombes (he/him), APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren (she/her), APK Undergraduate Coordinator, jahlgren@ufl.edu

GRADING

Exams – There will be 4 exams, and each is worth 25 points (i.e., 25% of final grade). Exam questions are generated by the course instructor and are based on the lecture notes and textbook reading assignment. Each exam will consist of 50 multiple choice and true/false questions worth 0.5 points each. Students will take exams in the same room where weekly meetings are held and will be allowed 50 minutes to complete each exam.

Extra credit quizzes – There will be 6 unannounced quizzes worth 0.5 point each which provide the opportunity to earn a total of 3 extra credit points. Quizzes will focus on the material that was covered during the previous *2 lectures* and aim to encourage/reward regular studying habits and attendance. You may be asked to draw a diagram, label a figure or answer true/false, multiple choice or short-answer questions. You must be present in class to earn extra credit from the quizzes. There will be NO make-up quizzes if you are absent.

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
B+	87-89%	3.33
B	80-86%	3.0
C+	77-79%	2.33
C	70-76%	2.0
D+	67-69%	1.33

D	60-66%	1.0
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/."

SUCCESS AND STUDY TIPS

- Read the assigned book chapters and study the lecture notes after each lecture. Do not fall behind. Keep up with the material and be prepared to take a quiz on every lecture day.
- Create your own questions and quiz yourself often.
- You will not be tested on material in the textbook that is not covered in the lectures.

Course Schedule*

Week	*Date*	*Lecture Topic*	*Book Chapter*
1	R – Aug 22	Course Introduction Common measurements	Syllabus 1
2	T – Aug 27	Homeostasis Bioenergetics	2 3
	R – Aug 29	Bioenergetics	3
3	T – Sep 3	Exercise Metabolism	4
	R – Sep 5	Exercise Metabolism Review	4 1, 2, 3, 4
4	T – Sep 10	**Exam 1**	1, 2, 3, 4
	R – Sep 12	Hormonal Response to Exercise	5
5	T – Sep 17	Neural Control of Movement	5
	R – Sep 19	Neural Control of Movement Skeletal Muscle	5 7
6	T – Sep 24	Skeletal Muscle	7
	R – Sep 26	Review	5, 7, 8
7	T – Oct 1	**EXAM 2**	5, 7, 8
	R – Oct 3	Cardiovascular Adjustments to Exercise	9
8	T – Oct 8	Cardiovascular Adjustments to Exercise	9

	R – Oct 10	Cardiovascular Adjustments to Exercise Pulmonary Adjustments to Exercise	9 10
9	T – Oct 15	Pulmonary Adjustments to Exercise	9
	R – Oct 17	Pulmonary Adjustments to Exercise	10
10	T – Oct 22	Acid Base Balance	11
	R – Oct 24	Temperature Regulation Review	12 9, 10, 11, 12
11	T – Oct 29	**EXAM 3**	9, 10, 11, 12
	R – Oct 31	Training Adaptations to Aerobic Exercise	13
12	T – Nov 5	Training Adaptations to Resistance Exercise	14
	R – Nov 7	Training Adaptations to Resistance Exercise Exercise Prescription	14 16
13	T – Nov 12	Exercise Prescription	16
	R – Nov 14	Training for Performance	20
14	T – Nov 19	Review	13, 14, 16, 20
	R – Nov 21	**EXAM 4**	13, 14, 16, 20
15	T – Nov 26	**THANKSGIVING HOLIDAY**	
	R – Nov 28	**THANKSGIVING HOLIDAY**	
16	T – Dec 3	TBA	