

Cardiovascular Exercise Physiology

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APK7170 | 3 Credits | Spring 2025



Course Info

INSTRUCTOR	Dr. Demetra Christou, Associate Professor Office: 142 FLG Office Phone: 352-294-1715 Email: ddchristou@ufl.edu Preferred Method of Contact: in person or email via CANVAS
OFFICE HOURS	2 hours/week to be posted on CANVAS
MEETING LOCATION	FLG 225
MEETING TIME	Tuesdays period 8 (3:00 - 3:50 PM) Thursdays periods 8-9 (3:00 – 4:55 PM)

COURSE DESCRIPTION

The course is designed to provide an understanding of the basic mechanisms controlling cardiovascular function at rest and in response to exercise.

PREREQUISITE KNOWLEDGE AND SKILLS

APK 6116C-Physiological Bases of Exercise and Sport Sciences or equivalent.

REQUIRED AND RECOMMENDED MATERIALS

Class materials will include PowerPoint slides, research articles, and other online resources provided on CANVAS. You are responsible for reading all assigned materials. Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor. The instructor is only responsible for these instructional materials.

Required textbook:

1) Advanced Cardiovascular Exercise Physiology, 2nd edition, Smith and Fernhall, Champaign: Human Kinetics. ISBN: UFAllAccess

Other recommended textbooks to be used for background reading:

2) Cardiovascular Physiology, 11th edition, Pappano and Wier, Elsevier. ISBN: 978-0-323-59484-4

3) Cardiovascular Physiology Concepts, 3rd edition, Klabunde, Lippincott Williams & Wilkins. New York: Oxford University Press 2005. ISBN: 978-1975150075

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. identify the mechanisms controlling cardiovascular function at rest
2. discuss the influence of aging on cardiovascular structure and function
3. identify the acute and chronic cardiovascular responses to exercise
4. present/critique research articles on cardiovascular exercise physiology
5. design and present a study proposal on a topic related to cardiovascular exercise physiology.

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://my-ufl.bluera.com/>. 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

Evaluation Components	% of Total Grade
Exams	45%
Presentation of original articles	30%
Study proposal	25%

Exams – There will be 3 exams in this course and will focus on the reading assignments and material presented in lectures.

Presentations – Research articles will be selected by the instructor and assigned to each student for presentation. The order of presenters and articles will be posted on CANVAS. Students are responsible for reading all assigned articles and being prepared to participate in the discussions. Specific instructions related to the presentations will be provided.

Study proposal – You will design and present a study proposal on a topic related to cardiovascular exercise physiology. Detailed instructions will be provided.

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
A	90-100%
B+	87-89%
B	80-86%
C+	77-79%
C	70-76%
D+	67-69%
D	60-66%
E	0-59%

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*

<i>Week</i>	<i>Date</i>	<i>Lecture Topic</i>
1	T – Jan 14	Introduction and course overview Cardiac myocytes
	R – Jan 16	
2	T – Jan 21	Electrical activity of the heart Heart as a pump
	R – Jan 23	
3	T – Jan 28	Echocardiography and cardiac adaptations to exercise
	R – Jan 30	
4	T – Feb 4	Vascular structure
	R – Feb 6	
5	T – Feb 11	Exam 1 Work on study proposal in class
	R – Feb 13	
6	T – Feb 18	Endothelial and vascular smooth muscle function
	R – Feb 20	
7	T – Feb 25	Hemodynamics and peripheral circulation Arterial blood pressure and arterial stiffening
	R – Feb 27	

8	T – Mar 4	Arterial blood pressure and arterial stiffening
	R – Mar 6	
9	T – Mar 11	Exam 2 Work on study proposal in class
	R – Mar 13	
10	T – Mar 18	Spring Break – NO CLASS
	R – Mar 20	
11	T – Mar 25	Acute cardiovascular responses to exercise
	R – Mar 27	
12	T – Apr 1	Chronic cardiovascular adaptations to exercise
	R – Apr 3	
13	T – Apr 8	Aging and cardiovascular alterations and exercise
	R – Apr 10	
14	T – Apr 15	Study proposals
	R – Apr 17	
15	T – Apr 22	Exam 3

* Schedule is subject to change. Changes will be announced on CANVAS and in class.