

CARDIOVASCULAR EXERCISE PHYSIOLOGY

APK7107 ~ 3 CREDITS ~ SPRING 2021

INSTRUCTOR: **Demetra Christou, PhD, FAHA**
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Preferred method of contact: email

OFFICE HOURS: M 2:30-3:30 pm or by appointment

MEETING TIME/LOCATION: W 1:55 to 2:45 pm and F 1:55 to 3:50 pm/210 FLG

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.

Recommended textbooks to be used for background reading:

1) Advanced Cardiovascular Exercise Physiology, D Smith and B Fernhall, Champaign: Human Kinetics, 2011. ISBN: 978-0-7360-7392-9

2) Cardiovascular Physiology, 8th edition, R Berne and N Levy, St Louis: Mosby Publishing 2001. ISBN-10: 0-323-01127-6

3) Human Cardiovascular Control, LB Rowell. New York: Oxford University Press 1993. ISBN:0-19-507362-2

COURSE FORMAT: The course will entail synchronous in-person instruction on the scheduled days/times. Lectures will NOT be recorded. To mitigate the risk for COVID-19, only students who have cleared return to campus status will be permitted to attend in-person meetings. Each week we will have two periods of in-class lecture and one period of presentation/discussion of research articles. More detailed information will be made available on CANVAS.

COURSE LEARNING OBJECTIVES:

By the end of this course, students should 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 AND UNIVERSITY POLICIES:

Requirements for class attendance, make-up exams 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 and to actively participate in all activities and group discussions to receive full participation points. 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 MAKE-UP POLICY: Unexcused absences on exam days will result in a zero on the exam. If you are ill or have an emergency that prevents you from taking the exam at the scheduled time, it is your responsibility to contact the instructor as soon as possible to try and schedule a make-up exam. Documentation of the illness or emergency will be required. 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.

COMMUNICATION: Students are responsible for reading emails sent by the instructor and course announcements on CANVAS. The best way to communicate with the instructor is by email. Students should expect to receive a response usually within 24 to 48 hours. All course grades will be posted on CANVAS. Any discrepancies should be pointed out to the instructor *as soon as possible*, and *before* the last day of class.

TECHNOLOGY: Please bring your laptop/tablet to class. However, 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. Any cell phone or other electronic device used during a quiz will be considered a violation of the student honor code (i.e., cheating) and will also result in a zero for that exam. Recording of lectures is strictly prohibited. The content of this course may not be used for any commercial purpose. Students found in violation of these policies may be subject to discipline under UF's Conduct Code.

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. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

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/>.

COVID-RELATED INFORMATION: The following policies and requirements related to COVID-19 are in place to maintain a safe learning environment. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.

- Prior to each in-person meeting, please check ONE.UF to ensure your return to campus status is cleared and be ready to retrieve your status on your phone if asked to show evidence in class. If your status is not cleared, then the instructor will ask you to leave.
- You are required to wear approved face coverings over your nose and mouth at all times during class and within buildings.

- Sanitizing supplies are available in the classroom. You are expected to sanitize your hands as you enter and exit the classroom and wipe down your desks prior to sitting down.
- Please practice physical distancing to the extent possible when entering and exiting the classroom.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing requirements (6 feet between individuals). Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- If you are experiencing COVID-19 symptoms ([Click here for guidance from the CDC on symptoms of coronavirus](#)), please use the UF Health screening system and follow the instructions on whether you are able to attend class. [Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms](#).

Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. [Find more information in the university attendance policies](#).

GETTING HELP:

Health and 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, 352-392-1161
- University Police Department, 352-392-1111 (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, 352-392-1601. 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, 352-392-2010 or 352-392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 352-846-1138. 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. Leo Ferreira, APK IDEA Liaison, ferreira@hhp.ufl.edu
- Dr. Rachael Seidler, APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, jahlgren@ufl.edu

GRADING:

Evaluation Components	% of Total Grade
Exam 1, 2 and 3 (20% each)	60%
Presentations	15%
Study proposal	15%
Attendance and participation	10%

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

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 at a later date.

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

Attendance and participation – You are expected to attend class and to actively participate in all activities and contribute to group discussions to receive full participation points.

GRADING SCALE: The following grading scale will be used in this course.

Letter Grade	Percent of Total Points	GPA Impact of Each Letter Grade
A	90-100%	4.00
B+	87-89%	3.33
B	80-86%	3.00
C+	77-79%	2.33
C	70-76%	2.00
D+	67-69%	1.33
D	60-66%	1.00
E	0-59%	0

For detailed information on current UF grading policies, please see the catalog:
<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

TENTATIVE COURSE SCHEDULE:

Week	Date	Topic
1	W – Jan 13	Course overview
	F – Jan 15	Intro and presentation/study proposal instructions
2	W – Jan 20	Cardiac myocytes
	F – Jan 22	Electrical activity of the heart
3	W – Jan 27	Heart as a pump
	F – Jan 29	Echocardiography
4	W – Feb 3	Vascular structure and function
	F – Feb 5	Vascular structure and function
5	W – Feb 10	Exam 1
	F – Feb 12	Endothelial and vascular smooth muscle function/presentation
6	W – Feb 17	Endothelial and vascular smooth muscle function
	F – Feb 19	Hemodynamics and peripheral circulation
7	W – Feb 24	Hemodynamics and peripheral circulation
	F – Feb 26	Arterial blood pressure and arterial stiffening

8	W – Mar 3	Arterial blood pressure and arterial stiffening
	F – Mar 5	Arterial blood pressure and arterial stiffening
9	W – Mar 10	Exam 2
	F – Mar 12	Aging
10	W – Mar 17	Aging
	F – Mar 19	Acute exercise responses
11	W – Mar 24	UF RECHARGE DAY ☺
	F – Mar 26	Chronic training adaptations
12	W – Mar 31	Chronic training adaptations
	F – Apr 2	Chronic training adaptations
13	W – Apr 7	Study proposals
	F – Apr 9	Study proposals
14	W – Apr 14	Exam 3
	F – Apr 16	Study proposals
15	W – Apr 21	Study proposals