

Cardiovascular Exercise Physiology

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APK7170 | 3 Credits | Spring 2024



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	Tuesday 2 to 3 pm and by appointment
MEETING LOCATION/TIME	FLG 245/ Thursday periods 7-9 (1:55 PM – 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.

Required textbook:

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

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. 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. 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 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. 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@hnp.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
Exams	45%
Presentation of original articles	30%
Study proposal	15%
Participation	10%

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.

Participation – You are expected to actively participate in all activities and contribute to group discussions to receive full participation points. More information on participation points will be provided on CANVAS. Please note that 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>

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*

Week	Date	Lecture Topic
1	R – Jan 11	Introduction and course overview
2	R – Jan 18	Cardiac myocytes Electrical activity of the heart
3	R – Jan 25	Heart as a pump Echocardiography and cardiac adaptations to exercise
4	R – Feb 1	Vascular structure
5	R – Feb 8	Exam 1 Work on study proposal
6	R – Feb 15	Endothelial and vascular smooth muscle function
7	R – Feb 22	Hemodynamics and peripheral circulation
8	R – Feb 29	Arterial blood pressure and arterial stiffening
9	R – Mar 7	Exam 2 Work on study proposal
10	R – Mar 14	Spring Break – NO CLASS
11	R – Mar 21	Aging and cardiovascular alterations
12	R – Mar 28	Acute cardiovascular responses to exercise
13	R – Apr 4	Chronic cardiovascular adaptations to exercise training
14	R – Apr 11	Exam 3 Work on study proposal
15	R – Apr 18	Study proposals