

# Clinical Exercise Physiology

APK4120 | 3 Credits | Fall 2024

## Course Info

### INSTRUCTOR

**Anna Gardner, PhD**  
Office: FLG 106-H  
Email: [akgardner@ufl.edu](mailto:akgardner@ufl.edu)

### OFFICE HOURS

MW 9:45 - 11:15 am or by appointment  
\*PLEASE NOTE: Office hours will be held in person unless otherwise indicated by the instructor.

### MEETING TIME/LOCATION

**Class number 17721 (section 089D)**  
MWF Period 1 7:25 – 8:15 am FLG 245

**Class number 10495 (section 2815)**  
MWF Period 2 8:30 – 9:20 am FLG 285

## COURSE DESCRIPTION

Provides an understanding of recent advances in exercise physiology and exercise prescription for clinical populations. Particular attention is placed upon the study of acute and chronic responses to exercise in patients with cardiac, pulmonary, metabolic and musculoskeletal diseases.

## PREREQUISITE KNOWLEDGE AND SKILLS

APK 3110C with minimum grade of C

## REQUIRED AND RECOMMENDED MATERIALS

Recommended Textbook: *Clinical Exercise Physiology* by Ehrman, Gordon, Visich, & Keteyain (ISBN: 9781718200449). Copyright 2023, 5th edition. Available via UF All Access.

Additional materials will be provided on the course website via Canvas. Students will be informed when to bring materials to class OR materials will be provided by the instructor.

## COURSE FORMAT

Students will attend live lectures three times each week. Lecture slides will be available to students to print before coming to class.

## COURSE LEARNING OBJECTIVES:

Content: Identify, describe, and explain the basic concepts, theories and terminology of natural science and the scientific method within the subject areas of cardiac, pulmonary, and metabolic diseases. Identify, describe, and

explain the major scientific developments within the subject area. Identify, describe, and explain relevant processes that govern biological and physical systems within the subject area.

Critical Thinking: Formulate empirically-testable hypotheses derived from the study of physical processes or living things within the subject area of cardiac, pulmonary, and metabolic diseases. Apply logical reasoning skills effectively through scientific criticism and argument within the subject area. Apply techniques of discovery and critical thinking effectively to evaluate experimental outcomes.

Communication: Communicate concepts clearly and effectively using written and/or graphic forms on examinations.

Course Objectives: Upon completion of this course, the student should have an understanding of the following topics in Clinical Exercise Physiology:

- a. Basic principles of health and exercise assessment
- b. Basic principles of cardiovascular physiology and clinical management
- c. Basic principles of respiratory system disorders and management
- d. Basic principles of endocrine and metabolic disorders and clinical management
- e. Basic principles of neuromuscular disorders and clinical management
- f. Basic principles of exercise training and prescription in patients with the above listed disorders
- g. Novel concepts involving exercise-based strategies as therapy for clinical conditions

## Course & University Policies

### ATTENDANCE POLICY

Attendance is not required *but is strongly encouraged*. **Failure to attend class will almost certainly result in a significantly lowered grade.** Students will be responsible for all material presented in class in addition to any material posted on the class website. Lectures will not be recorded/posted, so it is the student's responsibility to get notes from a classmate following an absence. Exam questions will be derived from lecture material as presented in class, assigned readings if any, and any class handouts posted on the class website.

### PERSONAL CONDUCT POLICY

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. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor in this class.

Cheating on exams in any way will not be tolerated. Cheating includes, but is not limited to: attempting to look or looking at another student's exam or answers; or allowing another student to look at one's exam or answers. If a student is made aware of cheating, approached by another student to conspire to cheat, or concerned that another student may be attempting to look at his/her exam or answers, it is that student's responsibility to notify the instructor to avoid implication in cheating incidents. **Any student caught cheating on any exam will receive a zero for that exam. There will be no exceptions. Additionally, the instructor may assign a failing grade for the course.** In all cases, students will be subject to the regulations and consequences, which can include probation or expulsion from the University, outlined in the Student Handbook.

## APPROPRIATE USE OF AI TECHNOLOGY

The UF Honor Code strictly prohibits *cheating*. The use of any materials or resources prepared by another person or Entity (inclusive of generative AI tools) without the other person or Entity's express consent or without proper attribution to the other person or Entity is considered *cheating*. Additionally, the use of any materials or resources, through any medium, which the Faculty / Instructor has not given express permission to use and that may confer an academic benefit to a student, constitutes *cheating*.

In addition:

1. Phones must be turned to silent or off during all lectures and exams. Vibrate and quiet settings are not acceptable. They should never be visible during an exam and, if seen, will be looked upon as an attempt to use it resulting in the consequences shown below in "Academic Honesty".
2. Students will be expected to show respect to the instructors and all students in the class. Students behaving disrespectfully (talking during lectures, making inappropriate or threatening statements to instructor or students, using phones in class, etc.) will be dismissed from the lecture or exam at hand. All university regulations governing student behavior will be enforced.
3. Lectures will begin at the scheduled times. Students will be expected to arrive on-time, and in the event of tardiness, to enter the room with as little disruption as possible.
4. Lecture notes posted on the class website are the property of the instructor. They are posted solely for students in this course and solely to facilitate note-taking and studying. No part of the materials may be re-distributed, reproduced, or used for any purpose other than note-taking and studying.

## EXAM MAKE-UP POLICY

**Unexcused availability for exams will result in a zero on the exam.** Students who are ill or have an emergency that prevents from taking the exam during the time available are responsible for contacting the instructor as soon as possible. **Make-up exams are offered at the discretion of the instructor given that there is a medical, family, or other emergency that deems the need for a make-up.** Requirements for make-up exams, assignments, and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

A student experiencing an illness should visit the UF Student Health Care Center 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](http://www.dso.ufl.edu)) and follow the DSO Care Team procedures for documentation and requesting a make-up assignment (<https://www.dso.ufl.edu/care/courtesy-letters/>). 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.

Canvas: A ticket number received from UFIT Helpdesk must accompany requests for make-ups due to technical issues (see Academic Resources below). The ticket number will document the time and date of the problem. If the time and date are past the assignment deadline, the request may not be granted. You must e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

## 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.

## 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/>.

## Getting Help

### HEALTH & WELLNESS

- ***U Matter, We Care:*** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto: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](mailto: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](mailto:vcourt@ufl.edu)
- Dr. Demetra Christou (she/her), APK Department Vice Chair, [ddchristou@hhp.ufl.edu](mailto:ddchristou@hhp.ufl.edu)
- Dr. Steve Coombes (he/him), APK Graduate Coordinator, [rachaelseidler@ufl.edu](mailto:rachaelseidler@ufl.edu)
- Dr. Joslyn Ahlgren (she/her), APK Undergraduate Coordinator, [jahlgren@ufl.edu](mailto:jahlgren@ufl.edu)

## Grading

**Exams:** There will be a total of four exams given throughout the semester, including the final exam. Exams 1 through 3 will each be worth 50 points. You will be told what chapters each exam will cover. The final exam is worth 50 points and **will be cumulative**, including all material covered during the semester as well as the group presentations. Exams will consist of multiple choice, fill-in-the-blank, short answer, and true/false questions. Exam dates are listed in the syllabus on the course schedule page. You must take the exam during your regularly-scheduled class time (i.e. the section you are assigned to in ONE.UF) unless prior arrangements were made with the instructor. All students must be present at the scheduled exam prior to any student completing the exam and leaving the examination room. Once any student has completed the exam and left the exam room, no late-arriving students will be admitted to the exam.

**Case Studies:** There will be three case studies completed throughout the semester. These will be based on real-life scenarios with questions that allow you to apply what we've covered in class. Case studies 1 and 2 are each worth 15 points and case study 3 is worth 20 points. Each case study is due by the date specified on the course schedule. You are given ample time to complete this assignment, therefore, late submissions will incur the following penalties: 20% deduction if submitted within 24 hours after deadline, 40% deduction if submitted 24-48 hours after deadline. Any submissions over 48 hours past the deadline will not be accepted and will receive a 0 on the assignment. Case studies must be typed and submitted via Canvas (under the Assignments tab). Please note: Only one submission is allowed per case study. Therefore, please make sure only your final draft is submitted.

**Group Presentation:** You will be placed in groups of 2-4 students (depending on class size) and select a disease or condition to "teach" the class. **You must submit your disease/condition to the instructor via email by Wednesday, October 2.** Please note, you must choose a disease/condition different from ones already discussed in lecture. In addition, these cannot be duplicated among groups; therefore, no two groups can present on the same disease/condition. These are chosen on a first come, first served basis. See the last page of the syllabus for more detail on this project, including a rubric for how the assignment will be graded.

**Final Grades:** Your final course grade will consist of the evaluations listed above. No extra-credit assignments will be offered in this course. There will be no exceptions. **Students should not email the instructor requesting consideration for a higher grade or extra-credit. There will be no additional extra-credit provided in any circumstance.**

Evaluation Components (number of each)	Points Per Component	Approximate % of Total Grade
Exams (4)	50 pts each = 200 pts	200/290 = 69%
Case Studies (3)	15 + 15+ 20= 50 pts	50/290 = 17.2%
Group Presentation (1)	40 pts	40/290 = 13.8%

### GRADING SCALE

Any discrepancies with points displayed in the Canvas gradebook should be pointed out to the instructor *before* the final exam. **There is no curve for this course.** More detailed information regarding current UF grading policies can be found here: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>. *Any requests for additional extra credit or special exceptions to these grading policies will be respectfully ignored.*

### Grading Scale:

Letter Grade	Percentage of Total Points	GPA Impact
A	90.0-100	(GPA 4.0)
B+	87.0-89.9	(GPA 3.33)
B	80.0-86.9	(GPA 3.0)
C+	77.0-79.9	(GPA 2.33)
C	70.0-76.9	(GPA 2.0)
D+	67.0-69.9	(GPA 1.33)
D	60.0-66.9	(GPA 1.0)
E	Below 60	(GPA 0.0)

### WEEKLY COURSE SCHEDULE

Every effort will be made to adhere to the tentative lecture topics and exam dates listed. However, topic dates and exam dates are subject to change by the instructor.

Date	Topic	Text Chapter(s)
Aug 23 (F)	Introduction to Course/Presentation Assignment	
Aug 26 (M)	Profession of Clinical Exercise Physiology	1
Aug 28 (W)	General Interview and Examination Skills (GIES)	4
Aug 30 (F)	GIES Cont'd	4
Sep 2 (M)	<b>LABOR DAY- NO CLASS 😊</b>	
Sep 4 (W)	Graded Exercise Testing	5
Sep 6 (F)	Graded Exercise Testing (cont'd)	5
Sep 9 (M)	No formal class: Watch recorded lecture for Chapter 6: Exercise Prescription	6
Sep 11 (W)	No formal class: Watch recorded lecture for Chapter 6: Exercise Prescription (cont'd)	6
Sep 13 (F)	No formal class: Watch recorded lecture for Chapter 2: Promoting a Physically Active Lifestyle	2
Sep 16 (M)	<b>Exam #1</b>	1, 2, 4, 5, 6
Sep 18 (W)	Review of Cardiovascular Anatomy & Physiology	
Sep 20 (F)	Review of Cardiovascular Anatomy & Physiology (Cont'd) Acute Coronary Syndromes	14
Sep 23 (M)	Acute Coronary Syndromes (Cont'd) <b>Don't forget- Case Study #1 due today!</b>	14
Sep 25 (W)	Acute Coronary Syndromes (Cont'd) Revascularization of the Heart	14, 15
Sep 27 (F)	Revascularization of the Heart (Cont'd) Peripheral Artery Disease	15, 17
Sep 30 (M)	Cardiac Electrical Pathophysiology	18
Oct 2 (W)	Cardiac Electrical Pathophysiology <b>(PRESENTATION TOPIC DUE!)</b>	18
Oct 4 (F)	Makeup day (if necessary)	
Oct 7 (M)	<b>Exam #2</b>	CV Review, 14, 15, 17, 18
Oct 9 (W)	Arthritis	24
Oct 11 (F)	Arthritis (Cont'd)	24
Oct 14 (M)	No Formal Class – Watch recorded guest lecture by Dean Reid on Asthma	20

Oct 16 (W)	No Formal Class – Watch recorded guest lecture by Dean Reid on COPD	19
Oct 18 (F)	<b>HOMECOMING- NO CLASS 😊</b>	
Oct 21 (M)	Older Adults/Osteoporosis <b>Don't forget- Case Study #2 due today!</b>	25, 33
Oct 23 (W)	Older Adults/Osteoporosis (Cont'd) & Children	25, 33, 32
Oct 25 (F)	Children (Cont'd)	32
Oct 28 (M)	<b>Exam #3</b>	19, 20, 24, 25, 32, 33
Oct 30 (W)	Diabetes	8
Nov 1 (F)	Diabetes (Cont'd)	8
Nov 4 (M)	No formal class: Watch recorded lecture for Obesity & Metabolic Syndrome	9, 12
Nov 6 (W)	No formal class: Watch recorded lecture for Obesity & Metabolic Syndrome (Cont'd)	9, 12
Nov 8 (F)	Stroke	30
Nov 11 (M)	<b>VETERANS DAY- NO CLASS 😊</b>	
Nov 13 (W)	Stroke (Cont'd)	30
Nov 15 (F)	Class Presentations <b>Don't forget- Case Study #3 due today!</b>	
Nov 18 (M)	Class Presentations	
Nov 20 (W)	Class Presentations	
Nov 22 (F)	Class Presentations	
Nov 25-29	<b>NO CLASS THIS WEEK – HAPPY THANKSGIVING 😊</b>	
Dec 2 (M)	Class Presentations	
Dec 4 (W)	Class Presentations	
Dec 6 (F)	<b>No Class – Reading day</b>	
Dec 10 (Tu)	<b>Class number 17721 (section 089D – this is the 7:25 am class)</b> <b>Cumulative Final Exam 8:00 – 10:00 pm</b>	All topics previously covered including group presentations
Dec 12 (Th)	<b>Class number 10495 (section 2815 – this is the 8:30 am class)</b> <b>Cumulative Final Exam 10 am - 12 noon</b>	All topics previously covered including group presentations

## SUCCESS AND STUDY TIPS

- a. Snowball lecture material.
- b. Stay on top of course material. This course covers a lot of information at a fast pace. You will easily become overwhelmed if you procrastinate. Avoid studying at the last minute and cramming for exams.
- c. Check Canvas announcements/emails daily. I will post important information as announcements.
- d. Prior to exams, create your own list of mock exam questions from the lecture material and use these to study.
- e. Create your own “medical dictionary”. As we go through the chapters, highlight words/phrases you are unfamiliar with and add them (along with the meaning) to your dictionary. You will be responsible for knowing medical terminology.
- f. Utilize GroupMe (APK 4120 Clin Ex Phys) to ask questions, organize study sessions, etc.

## Group Presentation Assignment

You will be placed in groups of 2-4 students (depending on class size) and select a disease or condition to “teach” the class. **You must submit your disease/condition to the instructor via email by Wednesday, October 2.** Please note, you must choose a disease/condition different from ones already discussed in lecture. In addition, these cannot be duplicated among groups; therefore, no two groups can present on the same disease/condition. These are chosen on a first come, first served basis. See rubric below for components that must be included in your presentation. In addition:

- Your presentation should be approximately 12-15 minutes long. Please do not go over 15 minutes.
- Each group member must present to receive credit for the project.

Grading Rubric	Point value
Condition/disease emailed to Dr. Gardner by deadline	1
Disease scope and definition (examples: prevalence, does it affect certain individuals more than others?)	7
Disease signs/symptoms and pathophysiology	10
Diagnosis & Treatment	10
Special Considerations for Exercise Testing & Prescription	7
Overall presentation (appropriate dress, preparedness, clarity of slides, mixture of text and images, delivery of content, appropriate duration)*	5*

**\*Note: This portion of the rubric is graded on an individual basis. The other components of the rubric are graded on a group basis (i.e. all groups members receive the same points for this).**

**Total point value: 40 points**

## Suggestions for Group Work Success

- Communication is key! Exchange contact info right away and do your best to respond promptly to texts, emails, etc.
- Work with group members to be available for meetings outside of class, even if this means 15-20 minutes here and there at night or on weekends.
- Get to know one another! This not only makes the group work more fun, it also makes it easier to share ideas and collaborate on the project.

## Suggestions for Group Presentation Success

- Practice your final presentation as often as necessary for each member of your group to feel comfortable and confident.
- It is assumed that each person in the group will have relatively the same amount of slides/information to present.
- Do not make your slides too “wordy”, rather use the slides as a guide for what you need to say.
- Do not read directly from your notes or the slides, unless you are stating verbatim a quote or definition.

- You are not required to dress up, however, this is an upper level course so please dress appropriately (i.e. jeans and a shirt are fine, pajamas are not).

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