

## CLINICAL EXERCISE PHYSIOLOGY

APK 4120 ~ 3 CREDITS ~ SPRING 2020

**INSTRUCTOR:** Anna Gardner, Ph.D.  
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Preferred Method of Contact: email

**OFFICE HOURS:** MW 9 – 10:30 am or by appointment

**MEETING TIME/LOCATION:**

Section 1A57 MWF Period 7 (1:55 – 2:45 pm) FLG 245

Section 0947 MWF Period 8 (3:00 – 3:50 pm) FLG 245

**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: 9781450412803). Copyright 2013, 3rd edition.

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 lecture.

## **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 AND UNIVERSITY POLICIES:**

**ATTENDANCE POLICY:** Attendance is not required; however, **students will be responsible for all material presented in class in addition to any material posted on the class website. Failure to attend class will almost certainly result in a significantly lowered grade.** 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:** 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, 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.

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. No audio or video recordings may be made of any part of this course without written consent by the instructor who is administering that part of the course.
5. 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 absences/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 class attendance and 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.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with the university policies that can be found at  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**ACCOMMODATING STUDENTS WITH DISABILITIES:** Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation within the first three (3) days 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 in this class are participating in GatorEvals. This evaluation system is designed to be more informative to instructors so that teaching effectiveness is enhanced and to be more seamlessly linked to UF's CANVAS learning management system. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Thank you for serving as a partner in this important effort.

## GETTING HELP:

### Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact [umatter@ufl.edu](mailto: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](mailto: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/>

## GRADING:

**Exams:** There will be a total of four exams given throughout the course of the semester, including the final exam. Each exam will be worth 50 points. You will be told what chapters each exam will cover. ***The final exam will be cumulative*** and include all material covered during the semester, as well as questions derived from student presentations. Exams will consist of multiple choice, true/false, and short answer questions.

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.

**Current event assignment:** You will be placed in teams of 2 to 4 students (depending on overall class size) and select a current topic or news (within last 5 years) in the field of clinical exercise physiology, and relevant to topics discussed in class (clinical conditions, exercise training, exercise-related strategies, impact of physical inactivity, etc). They

may be in the form of news articles, stories, television clips, etc that have scientific rationale and research study underlying the story. Your team will present the current event topic during class on an assigned date and will discuss why the topic is relevant (does it support/refute material learned in class?), why is it novel, what are your own ideas/concerns about the topic (not mentioned in the news item), are there other conditions for which this news item may be relevant? You will have 8 minutes to present, and 5 minutes to answer questions from the instructor and students. Start listening and paying attention to the news now... **you can submit your topic at any time but no later than March 25th.** Topics will be granted first come, first serve, to avoid repetition. Suggested links for searching ideas include (but not limited to) CNN health; Mayo Clinic Healthy Lifestyle; NY Times Health; Runners World; BBC health...

**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 whose percentage grades lie in the decimal points between two letter grades may be considered for the higher grade based on their performance in the class. **Students should not email the instructor requesting consideration for a higher grade or additional extra-credit. There will be no additional extra-credit provided in any circumstance.** This is a departmental policy and outside the control of the instructor.

Assessments:

|                     |                  |
|---------------------|------------------|
| Exam #1             | 50 points        |
| Exam #2             | 50 points        |
| Exam #3             | 50 points        |
| Final exam          | 50 points        |
| <u>Presentation</u> | <u>20 points</u> |
| Total:              | 220 points       |

**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 interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.*

Grading Scale (%):

|               |              |
|---------------|--------------|
| A 93.0-100    | A- 90.0-92.9 |
| B+ 87.0-89.9  | B 83.0-86.9  |
| B- 80-82.9    | C+ 77.0-79.9 |
| C 73.0-76.9   | C- 70.0-72.9 |
| D+ 67.0-69.9  | D 63.0-66.9  |
| D- 60.0-62.99 | E Below 60.0 |

## 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 with advance notice to students.

| Date       | Topic   | Text Chapter(s)                      |
|------------|---|--------------------------------------|
| Jan 6 (M)  | Introduction to Course/ Presentation Assignment               |                                      |
| Jan 8 (W)  | Profession of Clinical Exercise Physiology                    | 1                                    |
| Jan 10 (F) | General Interview and Examination Skills                      | 4                                    |
| Jan 13 (M) | GIES Case Study   | 4                                    |
| Jan 15 (W) | Graded Exercise Testing                                       | 5                                    |
| Jan 17 (F) | Exercise Prescription   | 6                                    |
| Jan 20 (M) | <b>No Class- Closed for MLK, JR. DAY</b>                      |                                      |
| Jan 22 (W) | Exercise Prescription cont'd                                  | 6                                    |
| Jan 24 (F) | Promoting a Physically Active Lifestyle                       | 2                                    |
| Jan 27 (M) | <b>No Class- Study for Exam #1!</b>                           |                                      |
| Jan 29 (W) | <b>Exam #1</b>  | 1, 2, 4, 5, 6                        |
| Jan 31 (F) | Review of Cardiovascular Anatomy & Physiology                 |                                      |
| Feb 3 (M)  | Acute Coronary Syndromes                                      | 13                                   |
| Feb 5 (W)  | Revascularization of the Heart                                | 14                                   |
| Feb 7 (F)  | Peripheral Artery Disease                                     | 16                                   |
| Feb 10 (M) | Cardiac Electrical Pathophysiology                            | 17                                   |
| Feb 12 (W) | Stroke  | 29                                   |
| Feb 14 (F) | <b>No Class- SEACSM Meeting in Jacksonville</b>               |                                      |
| Feb 17 (M) | <b>No Class- Study for Exam #2</b>                            |                                      |
| Feb 19 (W) | <b>Exam #2</b>  | CV Review, 13, 14, 16, 17, 29        |
| Feb 21 (F) | Guest Lecture- Dean Reid- Asthma                              | 19                                   |
| Feb 24 (M) | Guest Lecture- Dean Reid- COPD                                | 18                                   |
| Feb 26 (W) | Class Activity- Case Study                                    |                                      |
| Feb 28 (F) | <b>No Class</b>   |                                      |
| Mar 2 – 6  | <b>No Class- SPRING BREAK WEEK</b>                            |                                      |
| Mar 9 (M)  | Guest Lecture- Scott Brakenridge, MD- Sepsis                  |                                      |
| Mar 11 (W) | Arthritis   | 23                                   |
| Mar 13 (F) | Older Adults/Osteoporosis                                     | 24, 32                               |
| Mar 16 (M) | Children  | 31                                   |
| Mar 18 (W) | Guest Lecture- Dr. Leo Ferreira- Chronic Heart Failure        | 15                                   |
| Mar 20 (F) | <b>No Class- Work Day for Presentations</b>                   |                                      |
| Mar 23 (M) | <b>No Class- Study for Exam #3</b>                            |                                      |
| Mar 25 (W) | <b>Exam #3 (PRESENTATION TOPIC DUE TO INSTRUCTOR!!!)</b>      | 15, 18, 19, 23, 24, 31, 32, & Sepsis |
| Mar 27 (F) | Diabetes  | 7                                    |
| Mar 30 (M) | Class Activity- Case Study                                    |                                      |
| Apr 1 (W)  | Guest Lecture- Tanja Taivassalo, PhD- Neuromuscular Disorders |                                      |
| Apr 3 (F)  | Obesity & Metabolic Syndrome                                  | 8, 11                                |
| Apr 6 (M)  | Class Activity- Case Study                                    |                                      |
| Apr 8 (W)  | <b>No Class- Work Day for Presentations</b>                   |                                      |
| Apr 10 (F) | Class Presentations (3 groups)                                |                                      |
| Apr 13 (M) | Class Presentations (3 groups)                                |                                      |
| Apr 15 (W) | Class Presentations (3 groups)                                |                                      |
| Apr 17 (F) | Class Presentations (3 groups)                                |                                      |
| Apr 20 (M) | Class Presentations (2 groups)                                |                                      |
| Apr 22 (W) | Class Presentations (2 groups)                                |                                      |
| Apr 24 (F) | <b>No Class- Reading day</b>                                  |                                      |
| Apr 29 (W) | <b>Section 0947 Cumulative Final Exam 7:30 – 9:30 am</b>      | All topics previously covered        |
| Apr 30 (R) | <b>Section 1A57 Cumulative Final Exam 3:00 – 5:00 pm</b>      | All topics previously covered        |

## SUCCESS AND STUDY TIPS:

- a. Use reading from the text to supplement what is covered in the lecture
- b. Begin studying lecture material *immediately* after the first lecture.
- c. If there was something in the textbook that was not in the lecture, you are not expected to know it.
- d. Do not fall behind. 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.
- e. Check Canvas announcements/emails daily. I will post important information as announcements.
- f. Prior to exams, create your own list of questions from the lecture material and use these to study.



## Current Event Assignment

### APK 4120

You will be placed in teams of 2 to 4 students (depending on overall class size) and select a current topic or news (within last 5 years) in the field of clinical exercise physiology, and relevant to topics discussed in class (clinical conditions, exercise training, exercise-related strategies, impact of physical inactivity, etc). They may be in the form of news articles, stories, television clips, etc that have scientific rationale and research study underlying the story. Your team will present the current event topic during class on an assigned date, and will discuss why the topic is relevant (does it support/refute material learned in class?), why is it novel, what are your own ideas/concerns about the topic (not mentioned in the news item), are there other conditions for which this news item may be relevant? You will have 8 minutes to present, and 5 minutes to answer questions from the Instructor and students. Start listening and paying attention to the news now... **you can submit your topic at any time but no later than March 25th**. Topics will be granted first come, first serve, to avoid repetition. Suggested links for searching ideas include (but not limited to) CNN health; Mayo Clinic Healthy Lifestyle; NY Times Health; Runners World; BBC health...

Total point value: 20 points

Grading Rubric:

| Criteria   | Point value |
|--|-------------|
| Finalized team and topic by deadline   | 1           |
| Identification of topic news source and scientific article linked to current event topic   | 1           |
| Description of topic and its novelty (why did you choose it)   | 5           |
| Relevance to clinical exercise physiology (does it support/refute material learned in class)?  | 2           |
| Does your topic have relevance to another clinical condition, and if so, provide example   | 2           |
| What are your own ideas/concerns about the topic (not mentioned in news item)  | 3           |
| Overall presentation of topic (preparedness, clarity of slides, mixture of text and images, delivery of content, appropriate length) | 4           |
| Ability to address questions   | 2           |