

Physiology of Exercise & Training

APK3110C | Class # 17719 | 3 Credits | Fall 2024

Course Info

INSTRUCTOR

Anna Gardner, PhD
Office: FLG 106-H
Email: 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 17719 Section number 089F
MWF Period 7 1:55 – 2:45 pm FLG 210

COURSE DESCRIPTION

Survey in exercise physiology which provides an overview of the acute and chronic responses to exercise. Particular attention is placed on understanding muscle bioenergetics and metabolism as well as the cardiopulmonary responses to exercise. Special topics include exercise testing, training technologies and exercise in hot and cold environments.

PREREQUISITE KNOWLEDGE AND SKILLS

APK 2105C with minimum grade of C.

REQUIRED AND RECOMMENDED MATERIALS

Recommended Textbook: Exercise Physiology: Theory and Application to Fitness and Performance by Powers & Howley 12th edition e-book.

Additional materials such as handouts, lectures, and worksheets will be provided on the course website via Canvas.

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:

A. To understand the physiological responses to acute and chronic exercise in the context of:

- *Skeletal muscle*
- *Skeletal muscle bioenergetics and metabolism*
- *Cardiovascular system*
- *Pulmonary system*
- *Acid base-balance during exercise*
- *Limiting factors to exercise performance*
- *Exercise testing for health and performance*

B. To select the appropriate tests for evaluating different components of fitness and athletic performance and become familiar with the current recommendations for exercise prescription for improving fitness and sport-specific performance.

Course & 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

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) and follow the DSO Care Team procedures for documentation and requesting a 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.

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, 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@hnp.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

Exams: There will be four exams given throughout the course of the semester, including the final exam. Each exam will be worth 50 points. **The final exam will be cumulative** and includes all material covered during the semester. 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. 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.

Calculation Activity: Students will complete a calculation activity in line with learning from Chapter 1. The document for this assignment is located in the Pages tab under the Chapter 1 Calculation Activity Assignment

folder. This assignment is worth 10 points and must be submitted to Canvas by Friday 9/6. Late submissions will incur the following grade penalty: 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.

Extra credit: There will be TWO extra credit opportunities provided throughout the semester. One will be based on review of a scientific manuscript and the other will be a case study. The extra credit assignments are each worth 5 points. The extra credit opportunities are completely optional and are not required as a part of this course. Extra credit assignments must be typed, using 12-point font in Arial or Times New Roman. They must be submitted via Canvas. **The extra credit assignments are due no later than Wednesday, December 4 at 11:59 pm. There will be no exceptions made for late submissions.**

Final Grades: Your final course grade will consist of the evaluations listed above, as well as the extra credit opportunities (should you choose to complete them). **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:

Calc Activity	10 points
Exam #1	50 points
Exam #2	50 points
Exam #3	50 points
<u>Exam #4</u>	<u>50 points</u>
Total:	210 points

Extra Credit (optional):

Article Review	5 points
Case Study	5 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 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)

Note: A grade of C or better is required to “pass” this course. A grade of C- or lower is insufficient.

Weekly Course Schedule

Week	Dates	Topic(s)
1	8/23	Introduction to Course
2	8/26-8/30	Chapter 0: History of Exercise Physiology Chapter 1: Common Measurements
3	9/2-9/6	NO CLASS MONDAY 9/2 - LABOR DAY Chapter 2: Control of Internal Environment Calculation Activity Due Friday 9/6!
4	9/9-9/13	Chapter 3: Bioenergetics Chapter 4: Exercise Metabolism
5	9/16-9/20	Chapter 5: Cell Signaling & Hormonal Response to Exercise
6	9/23-9/27	EXAM #1 (MONDAY 9/23: Ch 0-5) Chapter 7: The Nervous System
7	9/30-10/4	Chapter 8: Skeletal Muscle: Structure & Function
8	10/7-10/11	Chapter 9: Circulatory Response to Exercise
9	10/14-10/18	EXAM #2 (MONDAY 10/14: Ch 7-9) Chapter 10: Respiration during Exercise NO CLASS FRIDAY 10/18 - HOMECOMING
10	10/21-10/25	Chapter 10: Respiration during Exercise (cont'd) Chapter 11: Acid- Base Balance Chapter 12: Temperature Regulation
11	10/28-11/1	Chapter 12: Temperature Regulation (cont'd) Chapter 13: Physiology of Training
12	11/4-11/8	NO CLASS MONDAY 11/4 Chapter 13: Physiology of Training (cont'd) EXAM #3 (FRIDAY 11/8: Ch 10-13)
13	11/11-11/15	NO CLASS MONDAY 11/11 - VETERANS DAY Chapter 15: Exercise Tests to Evaluate Cardiovascular Fitness Chapter 16: Exercise Prescription

14	11/18-11/22	Chapter 17: Special Populations Chapter 18: Nutrition & Body Composition
15	11/25-11/29	NO CLASS THIS WEEK – HAPPY THANKSGIVING!
16	12/2-12/6	NO CLASS THIS WEEK – STUDY FOR FINAL Extra Credit Due Wednesday 12/4!!!
Finals week	12/12	Cumulative Final Exam 3 - 5 pm

SUCCESS AND STUDY TIPS

- a. Use reading from the text to supplement what is covered in the lecture.
- b. Snowball lecture material.
- c. If there was something in the textbook that was not in the lecture, you are not expected to know it.
- d. **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.
- e. Check Canvas announcements/emails daily. I will post important information as announcements.
- f. Prior to exams, create your own list of mock exam questions from the lecture material and use these to study.
- g. Utilize GroupMe (APK 3110C Phys of Exer) to ask questions, organize study sessions, etc.

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