

PHYSIOLOGY OF EXERCISE & TRAINING

APK 3110C ~ 3 CREDITS ~ FALL 2021

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

OFFICE HOURS: MW 10:00 – 11:30 am or by appointment

MEETING TIME/LOCATION (SEE APPROPRIATE CLASS NUMBER):

Class number 19571 (section 089F)

MWF Period 7 (1:55 – 2:45 pm) FLG 285

Class number 10655 (section 2789)

MWF Period 8 (3:00 – 3:50 pm) FLG 285

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 11th 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 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 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://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/>.

COVID-RELATED: We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- **If you are not vaccinated, get vaccinated.** Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.uflhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

- **You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated.** Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class. Hand sanitizing stations will be located in every classroom.
- **If you are sick, stay home and self-quarantine.** Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
- 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.
- If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.

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, 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

For suggestions or concerns related to IDEA, please reach out to 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:

Exams: There will be 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. Exams will consist of multiple choice 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.

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 and submitted via Canvas. **The extra credit assignments are due no later than December 1, 2021 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:

Exam #1	50 points
Exam #2	50 points
Exam #3	50 points
Exam #4	50 points
Total:	200 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 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

SUCCESS AND STUDY TIPS:

- Use reading from the text to supplement what is covered in the lecture
- Begin studying lecture material *immediately* after the first lecture.
- If there was something in the textbook that was not in the lecture, you are not expected to know it.
- 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.
- 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.

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.

Week	Dates	Topic(s)
1	8/23 – 8/27	Introduction to Course <i>Chapter 0:</i> History of Exercise Physiology <i>Chapter 1:</i> Common Measurements (Calculation Activity)
2	8/30 – 9/3	<i>Chapter 2:</i> Control of Internal Environment <i>Chapter 3:</i> Bioenergetics
3	9/6 – 9/10	NO CLASS MONDAY 9/6 (Labor Day) <i>Chapter 4:</i> Exercise Metabolism <i>Chapter 5:</i> Cell Signaling & Hormonal Response to Exercise
4	9/13 – 9/17	<i>Chapter 5:</i> Cell Signaling & Hormonal Response to Exercise (cont'd) EXAM #1 FRIDAY 9/17: Chapters 0-5)
5	9/20 – 9/24	<i>Chapter 7:</i> The Nervous System
6	9/27 – 10/1	<i>Chapter 8:</i> Skeletal Muscle: Structure & Function
7	10/4 – 10/8	<i>Chapter 9:</i> Circulatory Response to Exercise NO CLASS FRIDAY 10/8 (Homecoming)
8	10/11 – 10/15	EXAM #2 MONDAY 10/11: Chapters 7-9 <i>Chapter 10:</i> Respiration during Exercise
9	10/18 – 10/22	<i>Chapter 11:</i> Acid- Base Balance <i>Chapter 12:</i> Temperature Regulation
10	10/25 – 10/29	<i>Chapter 12:</i> Temperature Regulation (cont'd) <i>Chapter 13:</i> Physiology of Training
11	11/1– 11/5	NO CLASS MONDAY 11/1 EXAM #3 WEDNESDAY 11/3: Chapters 10-13 <i>Chapter 15:</i> Exercise Tests to Evaluate Cardiovascular Fitness
12	11/8 – 11/12	<i>Chapter 15:</i> Exercise Tests to Evaluate Cardiovascular Fitness (cont'd) <i>Chapter 16:</i> Exercise Prescription
13	11/15 – 11/19	<i>Chapter 17:</i> Special Populations NO CLASS FRIDAY 11/19

14	11/22 – 11/26	NO CLASS THIS WEEK – HAPPY THANKSGIVING!
15	11/29 – 12/3	<i>Chapter 18: Nutrition & Body Composition</i> Extra Credit Due by Wednesday 12/1!!!
16	12/6 – 12/10	NO CLASS- Study week
Finals week	12/13 – 12/17	<u>Cumulative Final Exam (see page 1 to identify your class/section number)</u> Class number 19571 (section 089F): 12/15 @ 10 am – 12 pm Class number 10655 (section 2789): 12/14 @ 12:30 – 2:30 pm