

# Physiology of Exercise and Training

APK3110C | Class # 19755 | 3 Credits | Summer 2022

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**Instructor:** Max Adolphs, Ph.D.  
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Preferred Method of Contact: email

**Office Hours:** Upon request

**Meeting Time/Location:** CSE E121; \_M,T,W, R, F | Period 2 (9:30 AM - 10:45 AM)

**Course Description:** Survey in exercise physiology that 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:** Exercise Physiology: Theory and Application to Fitness and Performance by Powers & Howley 11th edition e-book with CONNECT access.

**Course Format:** Students will attend live lectures five times each week. Copies of the lecture slides will be posted on the course website (on Canvas) prior to each lecture.

**Course Learning Objectives:** By the end of this course, students should be able 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

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 Policies:

**Attendance Policy:** Students are expected to be in class and participate in discussions. Any missed assignments will result in a zero for the assignment. No late or make-up assignments will be accepted unless prearranged or the absence is excused.

**Personal Conduct Policy:** Students are expected to exhibit behaviors that reflect highly upon themselves and our University. **Audio or video recordings** of any part of this course or activities in class are **not allowed without written consent by the instructor**. Any material recorded shall be used solely by students in the course. Recorded material from the class cannot be published, shared with others not taking the course, or made publicly available online in any circumstance.

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 or TA in this class.

**Exam Make-up Policy:** 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](http://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. 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>

**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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## 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/>

## Inclusion, diversity, equity, and accessibility Resources

For suggestions or concerns related to IDEA, please reach out to any of the following:

- Dr. Rachael Seidler, APK Graduate Coordinator, [rachaelseidler@ufl.edu](mailto:rachaelseidler@ufl.edu)
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, [jahlgren@ufl.edu](mailto:jahlgren@ufl.edu)

## Grading:

The following table outlines the point-accruing components of this course. The points listed are approximate and the final grade will be weighted based on the percentages of each category regardless of the actual number of points.

Evaluation Components (number of components)	Points Per Component (total)	% of Total Grade
Lecture Exams (3)	50 points each = 150 points total	65%
Lecture Quizzes	80 points total	35%

**Exams (65% of final grade)** – Exams will be at the end of each module (three exams total, one per module). Each exam will contain 25-35 questions and will last 50 minutes. Exams will be based on reading assignments and content covered in discussions and lectures. Questions will be multiple choice and true/false. Class materials, notes, or other sources cannot be used during the exams. Unauthorized use of materials will be considered a violation of the Academic Honor Code.

**Quizzes (35% of final grade)** – There will be timed quizzes administered throughout the semester using Canvas. The quizzes will address topics presented during lectures and assigned reading. The quiz will consist of short-questions or simple problem-solving exercises. Students will take the quiz individually and are permitted to use any materials they want while taking them. There will be 1-10 questions per quiz.

**Grading Scale:** Students take exams and quizzes using Canvas and scores are available immediately upon submission. Students should contact the instructor as soon as possible if they feel there is an error in the grading of individual questions or submission of final grades. Final course grades will be assigned based on the table below. The grade achieved by the student and showing on Canvas is final. There is no rounding of grades in any circumstance. 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.

More detailed information regarding current UF grading policies can be found here:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

Letter Grade	Percent of Total Points Associated with each Letter Grade	GPA Impact of Each Letter Grade
A	93.00 – 100%	4.00
A-	90.00 – 92.99%	3.67
B+	87.00 – 89.99%	3.33
B	83.00 – 86.99%	3.00
B-	80.00 – 82.99%	2.67
C+	77.00 – 79.99%	2.33
C	73.00 – 76.99%	2.00
C-	70.00 – 72.99%	1.67
D+	67.00 – 69.99%	1.33
D	63.00 – 66.99%	1.00
D-	60.00 – 62.99%	0.67
E	0.00 – 59.99%	0.00

### Weekly Course Schedule:

*Tentative dates* and course plan.

Week	Class Activity	Module
27-Jun	Chapter 3: Bioenergetics Chapter 4: Exercise Metabolism	Module 1
4-Jul	<b>(No class on July 4<sup>th</sup> - 4<sup>th</sup> of July)</b> Cell Structure and Membrane Potentials (readings provided) Chapter 7: Nervous System (Cell Structure and Membrane Potential) Chapter 8: Skeletal Muscle <b>Exam 1 Friday Jul 8<sup>th</sup></b>	
11-Jul	Chapter 8: Skeletal Muscle Chapter 9: Circulatory Response to Exercise	Module 2
18-Jul	Chapter 10: Respiration During Exercise <b>Exam 2 Friday July 22<sup>nd</sup></b>	
25-Jul	Chapter 10: Respiration During Exercise Chapter 11: Acid-base Balance	Module 3
1-Aug	Chapter 5: Hormonal Response Chapter 13: Aerobic and Anaerobic Training Chapter 14: Resistance Training <b>Exam 3 Friday August 5<sup>th</sup></b>	

*Disclaimer: This syllabus represents current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity.*

## Success and study tips:

- Read the book/ PowerPoints/ Papers before watching lectures
- Physiology is highly conceptual. Trying to memorize everything does not work (plus that approach is boring). When lectures are going on, focus less on taking notes and more on trying to comprehend concepts. This will help tremendously on exams.
- Go over the goals/ learning objectives section after each lecture and see if you can answer the learning objectives which correspond to the material that was covered. If you are struggling to understand them, meet with me!
- To expand on the last point, you should study daily. Trying to cram everything in before an exam in physiology is a huge mistake that almost never ends well.
- Repetition is key to learning complex concepts. Go over the material again and again.