Department of Applied Physiology and Kinesiology
College of Health and Human Performance
UNIVERSITY *of* FLORIDA

Connect with HHP

 @UFHHP
 @ufhhp
 @UF_HHP
 APK LinkedIn

Advanced Exercise Physiology

APK6170C | Class # 19599 | 3 Credits | Spring 2022

This class is entirely on-line. All your course lectures will be in video format and all assessments will be submitted in canvas.

Instructor:	**Max Adolphs, Ph.D.**
	Office: FLG 106G
	Office Phone: 352-294-1731
	Email: madolphs@ufl.edu
	Preferred Method of Contact: email
Office Hours:	Upon request
Course Website:	www.http://lss.at.ufl.edu

Course Description: This course is designed to provide a detailed understanding of acute and chronic responses to exercise. Particular attention is placed upon understanding the physiological responses to exercise at both a systems and cellular level. Emphasis is placed on muscle contractile properties, muscle bioenergetics and the endocrine responses to exercise.

Prerequisite Knowledge and Skills: APK6116C with a minimum grade C

Required and REcommended Materials: All materials needed for this course will be provided by the instructor

Course Learning Objectives: By the end of this course, students should be able to:
- Define, describe, and illustrate basic and advanced bioenergetics and physiological processes involved in the regulation of metabolism, skeletal muscle contraction and fatigue, blood flow and blood pressure, and breathing.
- Explain the integration of multiple systems in response to exercise and solve problems in that context
- Interpret and propose explanations for the metabolic, muscle, and cardiovascular responses to exercise in health, disease, and environmental challenges
- Defend and critique material or ideas related to bioenergetics, performance, and integrative exercise physiology

Course Policies:

Participation Policy: Because this is an entirely online course, you are not expected to physically be on UF's campus at any time. However, you are expected to participate in discussion posts, assignments, engagement activities, and exams.

Assignment Policy: All assignments are open-resource; however, please avoid using random web-sites and sites such as Wikipedia. Late submissions for all assessments/assignments/discussion posts are not accepted.

Exam Policy: There will be 3 lecture exams during this semester. These exams are closed-notes exams and will be proctored through Honorlock.

Make-up Policy: Unexcused missed exams will result in a zero on the exam. If you are sick or have an emergency that prevents you from taking the exam at the scheduled time, it is your responsibility to contact the instructor as soon as possible. Documentation of the illness or emergency will be required. If you need to schedule a make-up exam, please email the course instructor giving a detailed explanation and attaching any documentation that verifies your reasoning. Make-up exams will be given at the discretion of the instructor. Scheduling make-up exams is the responsibility of the student and should be done—if at all possible—before the scheduled exam time. If you have a serious emergency or death, please contact the Dean of Students Office (www.dso.ufl.edu) and they will contact your instructor so that you do not have to provide documentation of the emergency/death in order to get a make-up exam. Make-up exams are not permitted for the following (among others): family vacation, sporting event travel, attending weddings (unless you are IN the wedding), having exams in other classes on the same day.

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.

UF Policies:

uf student computing requirements: As a 100% online course and as per the UF student computing requirements, "access to and on-going use of a computer is required for all students." UF does not recommend students relying on/regularly using tablet devices, mobile phones or Chromebook devices as their primary computer as it may not be compatible with specific platforms used in this course or UF (https://it.ufl.edu/policies/student-computing-requirements/). Access to fast, secure Wi-Fi will be necessary for this course. If a student is an area with limited wi-fi access, UF students can access **eduroam** for free with their GatorLink log-in credentials.

> ***How to connect to eduroam:***

1. If you can get a Wi-Fi signal at any of the eduroam locations (see below) and your mobile device (laptop, smartphone, or tablet) has already been configured for eduroam, then you will automatically connect.
2. Otherwise, follow the instructions for connecting here: https://helpdesk.ufl.edu/connecting-to-eduroam-off-campus/.

There are more than 100 Wi-Fi hotspots in Florida, including several state university campuses and community colleges. You don't have to sit in a car--many locations have open spaces and communal rooms available so you can get online while socially distancing and following CDC guidelines in an air-conditioned space. Also, in Florida all of the UF/IFAS Research and Education Centers (REC) are equipped with eduroam, so if you live in a rural area of your county you can visit an REC to securely watch course videos and take care of your academic

needs. Here's a link to all the eduroam sites in the U.S.: https://incommon.org/eduroam/eduroam-u-s-locator-map/.

If you have any problems connecting to eduroam you can call (352-392-HELP/4357) or email the UF Computing Help Desk.

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). DRC-registered students must request their accommodation letter to be sent to their instructors via the DRC file management system prior to submitting assignments or taking quizzes/exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations. Students may reach out and contact their course instructor to verify receipt of their accommodation letter.

Students registered with the DRC: DRC-registered students will take their exams, both lecture and lab, in Canvas similar to other students but with their specific accommodations (i.e. extended time, use of screen reader, etc.) Please contact the instructor if the start time of exams needs to be adjusted due to overlap with other courses.

It is imperative that you verify your specific access needs with your course instructor at least 48 hours PRIOR to scheduled assessments.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/.

- o Honor code violations of any kind will not be tolerated and sanctions will be determined by the course instructor for first-time violators
- o Any use, access, or handling of technology during an exam will result in a zero on the exam
- o Students should use proper citations on assignments. Plagiarism of any kind is not permitted and violations will be reported.
- o All allegations, regardless of the severity, will be reported to the Dean of Students Office for University-level documentation and processing

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/. Thank you for serving as a partner in this important effort.

Getting Help:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- helpdesk@ufl.edu
- (352) 392-HELP - select option 2
- https://request.it.ufl.edu/

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

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)	30 points each = 90 points total	45%
Lecture Quizzes	90 points total	45%
Participation	20 points total	10%

Exams (45% 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. Exams require the use of HonorLock so that no other material can be accessed. 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 (45% 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.

Participation (10% of final grade) - Each student will be required to participate in weekly discussions. Every week, by Sunday at midnight Eastern Time each student will write one question and respond to at least one question in the discussion board. The written question will consist of a topic or concept they found interesting and would like to know more about or that they do not understand.

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:

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.

Module 1
Topic 1 – Cell structure
Topic 2 – Membrane Potentials
Topic 3 – Enzyme Kinetics
Topic 4 – Glucose Uptake
Module 2
Topic 1 – Glycogen Metabolism
Topic 2 – Energy Systems and Bioenergetics
Topic 3 – Skeletal Muscle, Macro, Micro, and Molecular Structure
Topic 4 – Neuromuscular Junction, Neuromuscular Transmission, and EC Coupling
Topic 5 – Calcium-activated force and cross-bridge cycle
Module 3
Topic 1 – Active Contractile Properties
Topic 2 – Muscle Fatigue
Topic 3 - Cardiovascular Autonomic and Hormonal Control
Topic 4 – Baroreflex and Exercise Blood pressure
Topic 5 – Smooth Muscle: Structure-Function and Extrinsic Control
Topic 6 – Intrinsic Control and Exercise Hyperemia
Topic 7 – Renal Physiology and Response to Exercise

Tentative dates and course plan.

Week	Class Activity	Module
9-May	Topic 1	Module 1
16-May	Topics 1-2	
23-May	Topics 2-3	
30-May	Topics 3-4 and **exam 1** (no class on May 30th – Memorial Day)	
6-Jun	Topic 1 and 2	Module 2
13-Jun	Topic 2	
20-Jun	No class – summer break	
27-Jun	Topics 3 and 4	
4-Jul	Topics 4 and 5 and **exam 2** (no class on Jul 4th – 4th of July)	
11-Jul	Topics 1 and 2	Module 3
18-Jul	Topics 3 and 4	
25-Jul	Topics 5 and 6	
1-Aug	Topics 6 and 7 and **exam 3**	

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.