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

Physiological Basis of Exercise

APK6116| Class # 19175 I 3 Credits | Spring 2025

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Course Info

INSTRUCTOR

Max Adolphs, PhD
Office: 106G
Office Phone: (352) 294-1731
Email: madolphs@ufl.edu
Preferred Method of Contact: email

OFFICE HOURS

Office hours will be shared weekly via email and students may also request individual appointments via email

MEETING TIME/LOCATION

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

Course Website: www.http://lss.at.ufl.edu

COURSE DESCRIPTION

This graduate level exercise physiology course is designed to examine the acute and chronic physiological responses to exercise. Topics covered include the systemic and cellular adaptations that occur in response to acute and chronic exercise, the physiological adaptations that occur in specific organ systems with exercise and principles of effective training paradigms to elicit physiological changes.

PREREQUISITE KNOWLEDGE AND SKILLS

*APK6116 is an introductory exercise physiology course aimed at graduate students who possess an undergraduate level understanding of human exercise physiology. This course is specific for students enrolled in the APK Online Master's Program and there are no course prerequisites to take APK6116. H*owever, any previous experiences in the following areas will be helpful to students taking this course: medical terminology, physiology, exercise physiology, anatomy, and/or biology.

REQUIRED AND RECOMMENDED MATERIALS

TEXTBOOK: Exercise Physiology: Theory and Application to Fitness and Performance by Powers, Howley and Quindry 11th edition. McGraw-Hill.

SUPPLEMENTARY MATERIALS: Addition materials in the form of original scientific journal articles will also be assigned and posted on the course Canvas page.

COURSE FORMAT

Students will watch multiple pre-recorded lectures each week. Students should read required readings and print out or download PDF lecture slides before watching lectures.

COURSE LEARNING OBJECTIVES:

By the end of this course, students will be able to:

- Understand and identify theories and laboratory techniques utilized in assessing human physiological responses to exercise and training.
- Graphically describe and explain systemic and cellular changes that occur with exercise
- Explain the efficacy of specific exercise training paradigms and the effect on the human body, both at the systemic and cellular level
- Identify and describe the gross and microscopic structures of the organ systems covered.
- Describe the relationship between structure and function at all levels of anatomical organization (molecular, cellular, tissue, organ, system, organism).
- Predict changes in function and adaptations on the body's organ systems if given a disease, environmental perturbation or training paradigm
- Critically evaluate and interpret scientific literature in exercise physiology
- Engage in critical and constructive academic discussions of exercise physiology topics
- Effectively communicate (written and verbally) with peers and professions using scientific knowledge in exercise physiology

Course & University 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.

ATTENDANCE 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. If a due date is missed due an unexcused reason then a zero will be assigned for that specific assignment.

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.

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*.

EXAM 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 when it is due, 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. 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*.

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.

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://my-ufl.bluera.com/. 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

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@hhp.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

The following table outlines the four components to the course on which you will be evaluated. The total points earned from each component will be summed and divided by the total points possible in the course: 620. If points are greater or less than 620, component percentages will be used to calculate final.

Evaluation Components (number of components)	Points Per Component (total)	% of Total Grade
Lecture Exams (4)	100 points each = 400 points total	64%
Lecture Quizzes	100 points total	16%
Weekly Discussions	60 points total	10%
Lab Assignments	15 points each = 60 points total	10%

Exams

Each module will have a timed exam worth 100 points. Question formats may include: fill in the blank, multiple choice, multiple response, true/false and short answer/free response. Students are not permitted access to any kind of materials or notes during these exams and will utilize HonorLock for exam proctoring. Exam questions are generated by the course instructor and will be based on the lecture material and any supplemental material assigned to students.

Lecture Quizzes

Following most lectures, students will take a multiple-choice and/or short answer quiz over the lecture material. While the quizzes will be open book and notes, they will also be timed. There will be a total of 100 quiz points throughout the semester.

Weekly Discussions

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. There will be a total of 60 discussion points throughout the semester.

Lab Assignments

Throughout the semester each student will complete four lab assignments each worth 15 points. The labs will consist of fictitious data related to course topics that each student will have to analyze and answer questions about.

GRADING SCALE

See the UF undergraduate catalog web page for information regarding current UF grading policies: www.registrar.ufl.edu/catalog/policies/regulationgrades. *Any requests for extra credit or special exceptions to these grading policies will be respectfully ignored.*

The following table describes the grade scale and GPA impact of each letter grade.

Letter Grade	Points Needed to Earn Each Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	*576.55-620*	93.00-100	4.00
A-	*557.95-576.54*	90.00-92.99	3.67
B+	*539.35-557.94*	87.00-89.99	3.33
B	*514.55-539.34*	83.00-86.99	3.00
B-	*495.95-514.54*	80.00-82.99	2.67
C+	*477.35-495.94*	77.00-79.99	2.33
C	*452.55-477.34*	73.00-76.99	2.00
C-	*433.95-452.54*	70.00-72.99	1.67
D+	*415.35-433.94*	67.00-69.99	1.33
D	*372.00-415.34*	60.00-66.99	1.00
E	*0-3371.99*	<60.00	0.00

Weekly Course Schedule

Week	Date	Topic
1	Jan 13 – Jan 17	Homeostasis/ Bioenergetics
2	Jan 20 – Jan 24	No Class Monday Jan 20th – MLK Day Bioenergetics
3	Jan 27 – Jan 31	Bioenergetics
4	Feb 3 – Feb 7	Cell Signaling **Exam 1 completed by Sunday, Feb 9th at midnight Eastern**
5	Feb 10 – Feb 14	Nervous System
6	Feb 17 – Feb 21	Nervous System
7	Feb 24 – Feb 28	Skeletal Muscle
8	Mar 3 – Mar 7	Skeletal Muscle
9	Mar 10– Mar 14	Autonomic Nervous System **Exam 2 completed by Sunday, Mar 16th at midnight Eastern**
10	Mar 17 – Mar 21	**Spring Break**
11	Mar 24 – Mar 28	Cardiovascular
12	Mar 31 – Apr 4	Respiratory
13	Apr 7 – Apr 11	Acid-Base and Temperature Regulation **Exam 3 completed by Sunday, Apr 13th at midnight Eastern**
14	Apr 14 – Apr 18	Endocrine
15	Apr 21 – Apr 23	Training and Adaptation **No class Apr 24 and 25th (Reading Days)**
16	Final Exam Week	**Exam 4 completed by Sat, May 3rd at midnight Eastern**

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.

STUDY TIPS:

- Read the book before watching the lectures.
- Physiology is highly conceptual. Trying to memorize everything does not work (plus that approach is boring anyways). 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 exercise physiology is a huge mistake that almost never ends well.
- Repetition is key to learning complex concepts. Go over the material again and again.