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

Applied Human Physiology

APK2150 | 4 Credits | Spring 2023

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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: Canvas email

OFFICE HOURS

Weekly office hours will be posted in CANVAS and students may request meetings by appointment via CANVAS email

MEETING TIME/LOCATION

All lectures will be online in the form of pre-recorded videos.

Lectures are ONLINE - videos will be posted on CANVAS. This class does NOT meet weekly. We will only meet in-person during the designated class day and time of Thursdays Period 1 (7:25-8:15am EST) for exams. Specific exam dates can be found on the course schedule at the end of the syllabus.

LAB TIME/LOCATION: Students meet for lab in-person once a week for two periods:

CLASS #	LAB DAY AND MEETING TIME	LOCATION
10542	T | Period 1-2 (7:25am-9:20am)	FLG 107E
10549	W | Period 3-4 (9:35am-11:30am)	FLG 107E
10550	F | Period 4-5 (10:40am-12:35pm)	FLG 107D
10551	R | Period 5-6 (11:45am-1:40pm)	FLG 107E
10552	W | Period 6-7 (12:50pm-2:45pm)	FLG 107D
10553	R | Period 8-9 (3:00pm-4:55pm)	FLG 107D
10554	F | Period 4-5 (10:40am-12:35pm)	FLG 107E
10555	R | Period 7-8 (1:55pm-3:50pm)	FLG 107E
10556	W | Period 1-2 (7:25am-9:20am)	FLG 107E
10600	W | Period 9-10 (4:05pm-6:00pm)	FLG 107E

COURSE DESCRIPTION

This physiology course will introduce students to the functions of the human body at the cellular, tissue, organ, systemic, and organismal levels with heavy emphasis on mechanisms of action.

PREREQUISITE KNOWLEDGE AND SKILLS

These must also match the UF course catalog and the SCNS. If there are no prerequisites for your course, state that.

REQUIRED AND RECOMMENDED MATERIALS

There are no course prerequisites for this course; however, students must have at least a sophomore standing. Any previous experiences in the following areas will be helpful to students: medical terminology, anatomy, physics, chemistry, and/or biology. To be clear: you do not need to have taken any of these courses to be successful in this course.

COURSE FORMAT

Students will watch pre-recorded lecture videos rather than attend a live lecture each week. Links to the lecture videos will NOT be removed and will be left up for the duration of the semester. Therefore, it is the student's responsibility to go through the material in timely matter prior to any lecture exam. It is highly advised that students adhere to the course schedule at the end of the syllabus to make sure they stay on track. Links to the video lectures can be found on the individual Chapter pages within Canvas. Students will also attend a 2- period in-person/live lab each week (see table above). Students should read required textbook pages and print out or download PDF lecture slides before watching lectures or attending lab. Students should read required textbook pages and print out or download PDF lecture slides before watching the lecture videos and attending lab.

PURPOSE OF THE COURSE

The purpose of this course is to introduce students to physiology (the study of how the body's structures function) and to present information and engage students in a way that promotes critical and creative thinking within the context of health and movement studies. Students will be asked to not only identify important structures of the human body, but integrate the functions of these basic structures together at all levels of the hierarchical organization (molecular, cellular, tissue, organ, and organ system) so that the information can be applied to novel, clinical scenarios. This applied method of teaching physiology is intended to enhance the long-term retention of the concepts covered and prepare students for future courses and experiences which may require health or movement-based communication and problem solving.

GENERAL EDUCATION SUBJECT AREA GOALS

Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

COURSE LEARNING OBJECTIVES

The following table describes the UF General Education student learning outcomes (SLOs) and the specific course goals for APK 2105c. By the end of this course, students should be able to:

Gen Ed SLOs	APK 2105c Course Goals	Assessment Method
Content: Demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.	• Describe the basic structures as well as the basic and more complex functions of the cell, the endocrine, nervous, muscular, cardiovascular, respiratory, and renal systems • Name and give examples of key physiological themes and basic regulatory mechanisms for sustaining life/health (e.g. homeostasis, negative and positive feedback) • Explain how major systems of the body are integrated and how these interactions influence homeostasis	• Lecture exams • Online homework • Online lab modules
Communication: Communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.	• Use correct anatomical, physiological, scientific, and medical terminology to describe and explain physiological phenomena, experiments used to study such phenomena, and how disease or injury impacts those processes	• Lab reports (rubric and policies outlined in grading section)
Critical Thinking: Analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.	• Predict how perturbations (e.g., disease, experimental manipulations) will alter physiological function and identify the mechanisms of action involved • Generate and interpret various graphical representations and results of physiological data	• Lecture exams • Online lab modules • Lab reports

Course & University Policies

UF Student Computing Requirements

As a course with online components, 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-toeduroam-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-locatormap/.

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

ATTENDANCE POLICY

LECTURE: Instead of attending lectures in-person, students will be viewing pre-recorded lecture videos in the course Canvas page. Lecture videos can be found on the corresponding chapter page in Canvas. It is in the best interest of the student to watch the lecture videos in a timely manner prior to any lecture exam. Procrastination can significantly, negatively impact one's performance in the class. Students will be assess on information from the lecture videos. Lecture video links are for use by students currently registered for the WEB section of APK2105c only. Any use of these video links is prohibited by anyone not in this APK2105c section. You must attend all exams for the course, which meet in person.

LAB: Attendance will be taken in lab, but there are no points given for participation. Attend the lab section for which you are enrolled, not the one most convenient for you on any given day. If you have to miss your lab for any reason, please make arrangements with your TA to attend another lab section that week. Although 5 attendance is not required for the lab, it is absolutely IMPERATIVE for your success in this course as there will be lab quizzes during your designated lab period on most weeks.

PERSONAL CONDUCT POLICY

Students are expected to exhibit behaviors that reflect highly upon themselves and our University:

- Read and refer to the syllabus
- Be prompt to office hours
- Use of professional, courteous standards for all emails and discussions:
- Adherence to the UF Student Honor Code: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/
    - Honor code violations of any kind will not be tolerated and sanctions will be determined by the course instructor for first-time violators
    - Any use, access, or handling of technology during an exam will result in a zero on the exam **and** potential failure of the course
    - All allegations, regardless of the severity, will be reported to the Dean of Students Office for University-level documentation and processing
    - **Any and all lecture video links are for the specific use by students that are currently registered for the WEB section of APK2105c only.**
    - *Sharing or posting of the lecture videos anywhere is strictly prohibited and will be processed as an Honor Code violation. Students who are aware of such sharing/posting of the lecture videos are obligated to disclose that information to their course instructor.*

EXAM MAKE-UP POLICY

Make-up exams will be given at the discretion of the instructor and documentation of the reason for the absence will always be required for consideration. You are not permitted a make-up exam for personal travel/vacations, work, or volunteering conflicts so please make your travel and scheduling

arrangements accordingly; this includes requesting to take an exam early for personal travel/vacations (i.e. summer trip to Europe and/or other exams). Additionally, many students will encounter having multiple exams in one day. This is also not a permissible reason for a make-up exam. Only if another exam is scheduled for the same time/overlaps with this course's exams will a request be considered. If you have a serious emergency or life event, please contact the Dean of Students Office (www.dso.ufl.edu) and they will contact your instructors so that you do not have to provide documentation of the emergency/death in order to get a make-up exam. 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.

If a student arrives late to the exam, they will still be permitted to take the exam (without penalty) with the remaining time left as long as no other student has submitted their exam and has left. If a student is late to the exam and at least one student has already completed their exam and has left, the late-arriving student will be subjected to the policy below with a penalty deduction on their exam.

In the case that a student is late and another student has already left or misses an exam due to an unexcused reason (i.e. overslept, mixed up the exam time, etc.), the exam can be taken with **a 20% penalty if taken within 24 hours** of the original exam time or with a **40% penalty if taken within 48 hours** of the original exam time. If a student is unable to take the exam within 48 hours of the original exam time, this will result in a ***zero grade for that exam.***

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 at the DRC. I strongly recommend that you **submit all exam requests through the DRC *in the first week of classes/after the drop-add period* to ensure that they are approved in a timely manner.** It is the DRC students' responsibilities to submit their request in accordance to the DRC policies and failure to do so results in an inability for the student to take their lecture exam at the DRC and may have to test with the regular class without their accommodations.

COURSE EVALUATIONS

Students in this class are participating in GatorEvals. This evaluation system is designed to be more informative to instructors so that teaching effectiveness is enhanced and to be more seamlessly linked to UF's CANVAS learning management system. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/ . Thank you for serving as a partner in this important effort.

Getting Help

HEALTH & 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 opti on 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@hhp.ufl.edu
- Dr. Rachael Seidler, APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, jahlgren@ufl.edu

Grading

The following table outlines the point-accruing components of the course. To calculate the final grade, total points earned in the course will be summed and divided by 535.

Evaluation Components	Points Possible (out of 535)	% of Total Grade
Lecture Exams (4)	80 pts X 4 exams = 320 pts	320 / 650 = 49.2%
Lab Quizzes (10)	10pts X 10 quizzes = 100pts	100 / 650 = 15.4%
Lab Modules (PhysioEx) (7)	10 pts X 7 modules = 70 pts	70 / 650 = 10.8%
Homework (4)	40 pts X 4 assignments = 160 pts	160 / 650 = 24.6%

Lecture Exams – Each exam will consist of 40 questions, 2 points per question. Questions will be multiple choice and true/false. **Exams are closed book and students are not permitted access to any kind of materials or notes during these exams**. Exam questions are generated by the course instructor and the majority of focus should be given to the lecture notes **and student learning objectives (SLOs) from each chapter** when studying (i.e. not the textbook). All lecture exams are held in-class during normal class time in the same room where normal lectures are held. Students will be allowed a class period (i.e. 50 minutes) to complete the exam. ***If you are late to an exam and the exam has already started:*** *you will still be allowed to take the exam provided that no one has already turned in their exam and scantron and has left the room and you will only have the remaining time in the exam period to finish. If a student has already handed in their exam and has left, you will be able to take the exam, but with a penalty. Please refer to the make-up exam policy on page 6.*

Exam Reviews: Once lecture exam grades are posted all students are highly encouraged to come to office hours to review their exams. This will allow students to go through the questions and see their correct/incorrect answers and have any questions regarding the exam answered. An announcement on CANVAS will be made when exam reviews will start. If students are unable to attend the review sessions during office hours, students may also schedule an appointment to go over their exam in-person. You will not be allowed to review all your previous lecture exams simultaneously at the end of the semester. Students will be allowed to review their exams up until the next lecture exam (i.e. can only review Lecture Exam 1 before students take Lecture Exam 2, etc.).

Homework – Homework due dates are posted in Mastering as well as in the course schedule at the end of the syllabus. Homework assignments are graded on the accuracy of your answers, NOT on completion. Homework assignments will be **open from the very beginning of the semester**. *It will be the student's responsibility to know the due dates and to complete the homework assignment in a timely manner (all deadlines are in EST)*. Students are able to complete the homework assignments on a rolling basis, i.e., students can complete and submit answers to homework questions a few questions at a time until they complete the assignment by the deadline. It is highly recommended that students complete their homework assignment early than waiting last minute (i.e., the night it is due). Homework assignments can be accessed through Mastering A&P on CANVAS. Homework problems are multiple choice, true/false, fill in the blank, and matching. These questions are specific to the textbook, so that should be your primary resource for answering those questions. For the fill in the blank questions, spelling and proper tense of the word counts. **These assignments are NOT intended to be used as the primary study tool for preparing for the exams**. The function of the homework assignments is to (a) get students more familiar with the textbook, and (b) to get students eased into answering physiology questions. This is a reinforcement tool of the concepts introduced in lecture. It is **not** prudent to complete the homework at the last minute as a "practice test."

The following are specific homework grading guidelines to keep in mind:

- You may open/close an assignment as many times as you wish until it is due.
- For multiple choice and fill-in-the-blank questions, you are penalized 50% if you miss on the first attempt and 100% if you miss on the second attempt. For true/false questions, you are penalized 100% if you miss on the first attempt.
- You are penalized a small fraction for opening a hint if one is available.
- *You are encouraged to complete questions as you go (i.e. complete questions as you complete each chapter on a weekly basis).*
- ***Late submissions of homework will be penalized 25% for every 24 hours after the deadline.*** Submissions 96 hours (i.e. 4 days) after the deadline will not be accepted and will receive a zero.
    - E.g. If the deadline is on Monday at 8:30am EST and a student submits their Homework assignment on Monday at 9:00am EST there will be a 25% penalty.

MasteringA&P Labs (PhysioEx Labs) – Each lab module is a PhysioEx lab that can be accessed through MasteringA&P through CANVAS. **PhysioEx Labs are due prior to your lab section.** The deadline for each lab section has been set in accordance to the start of their lab time (i.e. if your lab time is Mondays at 10:40am, then you need to complete your PhysioEx before then, and the deadline for the PhysioEx module is at 10:40am Mondays). It is imperative for you to complete the lab module prior to your lab for that particular week since you will be required to discuss the procedures, results and/or application of concepts from the PhysioEx lab in class. You have 6 hours to complete each lab module and accompanying questions; however, these should not take longer than 2 hours each. If you miss the submission deadline, you will not be allowed to complete the lab for credit (partial or full). Once you open the lab, you can close it and return to complete it, but the timer will not stop...so please plan to complete the lab module and questions in one setting to avoid being timed out and ensure that you have access to a reliable internet source while completing the lab module.

Lab Quizzes – Each lab quiz is worth 10 points, consists of 10 questions and will be a combination of multiple choice, true/false, fill in the blank, matching or multiple answers and will be taken in Canvas. Students are expected to bring their laptops/smart tablets to lab to take their lab quiz. The lab quiz will only be accessible to students during their designated lab times; TAs will provide the appropriate passcode to access the quiz during your lab time. In the event a student is unable to take their quiz electronically, the TA will have physical copies of the quiz as back-up on hand. The quizzes are based on the content of the previous week's lab. These quizzes will be closed-book individual quizzes, there will be no collaboration between students. Quiz questions are pulled from a question bank and students will randomly receive 10 questions of varying difficulty and level of inquiry.

GRADING SCALE

All grades will be posted directly into the CANVAS gradebook. Any discrepancies with points displayed in gradebook should be pointed out to the instructor before the last day of class. **There is no curve for this course and final grades will not be rounded up**. See the UF undergraduate catalog web page for information regarding current UF grading policies: 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.*

Minus grades are not assigned for this course. A minimum grade of C is required for all General Education courses, such as this one.

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	90.00-100%	4.0
B+	87.00-89.99%	3.33
B	80.00-86.99%	3.0
C+	77.00-79.99%	2.33
C	70.00-76.99%	2.0
D+	67.00-69.99%	1.33
D	60.00-66.99%	1.0
E	0-59.99%	0

Weekly Course Schedule

The following table represents current plans for the term. Any changes to this plan will be posted in CANVAS as an announcement.

All assessment (i.e. homework, exams, quizzes, etc.) deadlines/dates are in EST (Eastern standard time).

Before the first day of classes: *review the course syllabus carefully*

Week	Dates	Lecture Topic	Lab
1	Jan 9 – Jan 13	Ch.1 – Intro to Physiology Ch. 2 – Cells Structure and Function	*No Lab – Drop/Add Week*
2	Jan 16 – Jan 20	*Jan 16 is Martin Luther King Jr. Day – No Lecture/Lab* Ch. 2 – Cells Structure and Function Ch. 3 – Cell Metabolism	Lab 1 – Intro to Lab/Graphs/Reports (2hrs) *Monday labs will watch pre-recorded lab videos from their lab TAs*
3	Jan 23 – Jan 27	Ch. 3 – Cell Metabolism	Lab 2 – Transport Mechanisms Quiz 1 (Graphs, Data) *Complete PhysioEx 1 on your own prior to your lab*
4	Jan 30 – Feb 03	**Exam 1 – Mon Jan. 30th at 7:25am EST** **HW 1 due Mon. Jan 30th at 7:25am EST** Ch. 4 – Cell Membrane Transport	**Lab 3** – Enzyme Kinetics (2hrs) Quiz 2 (Transport Mech)
5	Feb 06 – Feb 10	Ch. 5 – Chemical Messengers Ch. 6 – Endocrine System	**Lab 4 –** Metabolism (2hrs) Quiz 3 (Enzyme Kin)
6	Feb 13 – Feb 17	Ch. 6 – Endocrine System Ch. 7 – Neural Signaling	**Lab 5 –** Endocrine Phys *Complete PhysioEx 4 on your own prior to your lab* Quiz 4 (Metabolism)
7	Feb 20 – Feb 24	Ch. 7 – Neural Signaling Ch. 8 – Neural Integration	**Lab 6 –** Neurophys. Quiz 5 (Endocrine) *Complete PhysioEx 3 on your own prior to your lab*
8	Feb 27 – Mar 03	**Exam 2 – Mon Feb. 27th at 7:25am EST** **HW 2 due Mon. Feb. 27th at 7:25am EST** Ch. 12 – Muscle Physiology	**Lab 7 –** Neuromuscular (2hrs)
9	Mar 06– Mar 10	Ch. 12 – Muscle Physiology Ch. 13 – Cardiac Function	**Lab 8 –** Muscle Phys. Quiz 6 (Neuro) *Complete PhysioEx 2 on your own prior to your lab*
10	Mar 13 – Mar 17	***Spring Break***	***No labs***
11	Mar 20 – Mar 24	Ch. 13 – Cardiac Function	**Lab 9 –** Cardiovascular Phys. (2hrs) Quiz 7 (Muscle)

12	Mar 27 - Mar 31	Ch. 14 – Vessels and Pressure	**Lab 10 –** Cardiovascular Function *Complete PhysioEx 5 on your own prior to your lab*
13	Apr 03 – Apr 07	Ch. 14 – Vessels and Pressure **Exam 3 – Wed. Mar. 29th at 7:25am EST** **HW 3 due Wed. Mar. 29th at 7:25am EST** Ch. 16 – Pulmonary Function	**Lab 11 –** Pulmonary Function (2hrs) Quiz 8 (CV)
14	Apr 10 – Apr 14	Ch. 16 – Pulmonary Function Ch. 17 – Gas Exchange	**Lab 12 –** Acid-Base Physiology Quiz 9 (Pulmonary) *Complete PhysioEx 10 on your own prior to your lab*
15	Apr 17 – Apr 21	Ch. 17 – Gas Exchange Ch. 18 – Renal Function	**Lab 13** – Renal Physiology Quiz 10 (Renal) *Complete PhysioEx 9 on your own prior to your lab*
16	Apr 24 – Apr 28	Ch. 18 – Renal Function Ch. 19 – Fluid/Electrolyte Balance Thurs/Fri, Apr 27/28 are Reading days	***No labs***
Exam 4 – Monday May 1st – 8:00pm-10:00pm			

Success and study tips:

- Read the book/ PowerPoints/ Papers before watching video 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.