

# Applied Human Physiology

APK2105 | 4 Credits | Fall 2024

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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** M, W, F 9:30 – 10:30 am

**MEETING TIME/LOCATION** MWF Period 2 8:30 – 9:20 am WH 0100

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

CLASS #	LAB DAY AND MEETING TIME	LOCATION
10513	M   Period 4-5 (10:40am-12:35pm)	FLG 107E
10514	T   Period 2-3 (8:30am-10:25am)	FLG 107E
10515	T   Period 6-7 (12:50pm-2:45pm)	FLG 107E
10520	R   Period 2-3 (8:30am-10:25am)	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

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.

## REQUIRED AND RECOMMENDED MATERIALS

Required: *Principles of Human Physiology* by Cindy Stanfield. Available through UF All-Access. This course uses Mastering A&P for PhysioEx lab assignments. In order to access these assignments, students must opt into UF all access and then register for Mastering A&P. Please follow the link below to register.

UF All Access: <https://www.bsd.ufl.edu/allaccess>

## 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.

## 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
<b>Content:</b> Demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.	<ul style="list-style-type: none"><li>• 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</li><li>• Name and give examples of key physiological themes and basic regulatory mechanisms for sustaining life/health (e.g. homeostasis, negative and positive feedback)</li><li>• Explain how major systems of the body are integrated and how these interactions influence homeostasis</li></ul>	<ul style="list-style-type: none"><li>• Lecture exams</li><li>• Online homework</li><li>• Online lab modules</li></ul>
<b>Communication:</b> Communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.	<ul style="list-style-type: none"><li>• 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</li></ul>	<ul style="list-style-type: none"><li>• Lab reports (rubric and policies outlined in grading section)</li></ul>

<p><b>Critical Thinking:</b> Analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.</p>	<ul style="list-style-type: none"> <li>• Predict how perturbations (e.g., disease, experimental manipulations) will alter physiological function and identify the mechanisms of action involved</li> <li>• Generate and interpret various graphical representations and results of physiological data</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture exams</li> <li>• Online lab modules</li> <li>• Lab reports</li> </ul>
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## Course & University Policies

### ATTENDANCE

**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 assessed 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 & ACADEMIC INTEGRITY

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*.

## IN-CLASS RECORDING

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or guest lecturer during a class session. Publication without permission of the instructor is prohibited.

To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

## EXAM MAKE-UP POLICY

In order for students to make-up any assignment (exam, quiz, PhysioEx, etc) without loss of all points, the instructor must be contacted ***before*** the assignment is due. Documentation proving the need for missing the assignment, ***which is dated before the assignment due date***, must be provided. Under ***rare*** circumstances (documented by the student and determined acceptable by the instructor) documentation which is provided promptly after the assignment due date may be accepted but this is never guaranteed and very unlikely to be approved.

Any type of documentation must be dated and officially contain the student’s name and or other identifying information in order to be accepted. Non-specific medical or other documentation will not be accepted under most circumstances. While sensitive information should be redacted from medical documentation, it must at minimum explain or show the reason why the student should be excused from completing the assignment on the due date. Documentation which simply states that a student was/is under the care of a provider and can return on a specific date will rarely be accepted. If the medical reason for the absence is perceived as sensitive to the student, this must be stated by the provider, and then may be accepted, but is not guaranteed.

Students will not be permitted a make-up assignment for personal travel/vacations, work, or volunteering conflicts. This includes requesting to take an assignment early for personal travel/vacations. With regard to lecture exams, many students will encounter having multiple exams in one day and this is 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 a student arrives late to an exam, they will 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.**

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. **Any variation of this statement is acceptable. More details are always helpful for our DRC-registered students.**

## 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/>.

## Getting Help

### HEALTH & WELLNESS

- **U Matter, We Care:** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto: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](mailto: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](mailto:vcourt@ufl.edu)
- Dr. Demetra Christou (she/her), APK Department Vice Chair, [ddchristou@hhp.ufl.edu](mailto:ddchristou@hhp.ufl.edu)
- Dr. Steve Coombes (he/him), APK Graduate Coordinator, [rachaelseidler@ufl.edu](mailto:rachaelseidler@ufl.edu)
- Dr. Joslyn Ahlgren (she/her), APK Undergraduate Coordinator, [jahlgren@ufl.edu](mailto: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 800. If any evaluation component ends up having less points than listed at the end of the semester, **that component will still be worth the percentage of the total grade listed no matter the number of total points awarded in the course.**

Evaluation Components	Points Possible (out of 535)	% of Total Grade
Lecture Exams (4)	120 pts X 4 exams = 480 pts	480/800 = 60%
Lab Quizzes (10)	10pts X 10 quizzes = 100 pts	100/800 = 12.5%
Lab Modules (PhysioEx) (6)	10 pts X 6 modules = 60 pts	60/800 = 7.5%
Homework (2 points per question)	160 pts	160/800 = 20%

**Lecture Exams** – Each exam will consist of 40 questions, 3 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.

**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** – Following most lectures videos, students will take untimed multiple-choice and/or short answer quizzes (homework) over the lecture material. Quizzes for the week will always be due on the Friday of that week at midnight Eastern time. There will be approximately 160 quiz points throughout the semester but will be worth 20% of the total grade regardless of the number of total points. Quiz due dates are also posted on Canvas. Quizzes are graded on the accuracy of answers, NOT on completion. 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). It is highly recommended that students complete their homework assignment early than waiting last minute.

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.
- There are no second attempts, so you will want to be confident in your answer before submitting.
- *You are encouraged to complete questions as you go (i.e. complete questions as you complete each lecture video).*
- **There are no late submissions of homework. Missed homework will result in a zero grade.**

**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, consisting 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 respectfully ignored.**

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).**

Week	Dates	Book Chapter - Lecture Topic	Lab
1	Aug 22 – Aug 23	<i>Aug 22-23, Aug. 26-28 – drop/add period</i> Ch. 1 - Intro to Physiology Ch. 2 - Cell Structure & Function	<b>No Labs</b> (use this time to locate the lab and print/download your lab slides)
2	Aug 26 – Aug 30	Cell Structure & Function Cell Metabolism	<b>Lab 1</b> – Intro to Lab/Graphs/Reports (2hrs)
3	Sep 2 – Sep 6	<i>Mon. Sept. 2<sup>nd</sup> – Labor Day holiday – no class or labs</i> Ch. 3 – Cell Metabolism	<b>No Labs</b>
4	Sep 9 – Sep 13	<b>HW 1 due (Mastering A&amp;P)</b> Ch. 4 – Cell Membrane Transport	<b>Lab 2</b> – Enzyme Kinetics (2hrs) Quiz 1 (Graphs, Data)
5	Sep 16 – Sep 20	<b>Exam 1 – Monday, Sept 16<sup>th</sup></b> Ch. 5 – Chemical Messengers Ch. 6 – Endocrine System	<b>Lab 3</b> – Metabolism (2hrs) Quiz 2 (Enzyme Kin)
6	Sep 23 – Sep 27	Ch. 6 – Endocrine System Ch. 7 – Neural Signaling	<b>Lab 4</b> – Transport Mechanisms Complete PhysioEx 1 on your own prior to your lab Quiz 3 (Metabolism)
7	Sep 30 – Oct 4	Ch. 7 – Neural Signaling Ch. 8 – Neural Integration	<b>Lab 5</b> – Endocrine Phys Complete PhysioEx 4 on your own prior to your lab Quiz 4 (Transport Mech)



8	Oct 7 – Oct 11	Ch. 8 – Neural Integration <b>HW 2 due (Mastering A&amp;P)</b>	<b>Lab 6</b> – Neurophys. <b>Quiz 5 (Endocrine)</b> Complete PhysioEx 3 on your own prior to your lab
9	Oct 14 – Oct 18	<b>Exam 2 - Monday, October 14<sup>th</sup></b> Ch. 12 - Muscle Physiology <i>Fri. Oct 18<sup>th</sup> - UF Homecoming – no labs → → → →</i>	<b>Lab 7</b> – Neuromuscular (2hrs) <i>Fri labs attend at different section</i>
10	Oct 21 – Oct 25	Ch. 12 Muscle Physiology	<b>Lab 8</b> – Muscle Phys. <b>Quiz 6 (Neuro)</b> Complete PhysioEx 2 on your own prior to your lab
11	Oct 28 – Nov 1	Ch. 13 Cardiac Function	<b>Lab 9</b> – Cardiovascular Phys. (2hrs) <b>Quiz 7 (Muscle)</b>
12	Nov 4 – Nov 8	Ch. 14 - Vessels and Pressure <b>HW 3 due (Mastering A&amp;P)</b>	<b>Lab 10</b> – Cardiovascular Function Complete PhysioEx 5 on your own prior to your lab <b>Quiz 8 (CV)</b>
13	Nov 11 – Nov 15	<i>Mon. Nov. 11<sup>th</sup> – observance of Veteran’s Day Holiday – no labs →</i> <b>Exam 3 – Tuesday, November 12<sup>th</sup></b> Ch. 16 - Pulmonary Ventilation	<b>Lab 11</b> – Pulmonary Function (2hrs) <b>Quiz 9 (Pulmonary)</b> <i>Mon. labs attend a different section</i>
14	Nov 18 – Nov 22	Ch. 17 - Gas Exchange Ch. 18 - Renal Function	<b>Lab 12</b> – Renal Physiology <b>Quiz 10 (Renal)</b> Complete PhysioEx 9 on your own prior to your lab
15	Nov 25 – Nov. 29	<i>Mon. Nov. 25<sup>th</sup> -Fri. Nov. 29<sup>th</sup> – Thanksgiving Holiday</i>	<b>No Labs</b>
16	Dec 2- Dec 4	Ch. 18 - Renal Function Ch. 19 - Fluid/Electrolyte Balance <i>Thurs and Fri are reading days – no classes</i>	<b>No Labs</b>
<b>Exam 4 (Ch. 16, 17, 18 and 19) – Thurs. Dec. 12<sup>th</sup> 10am-12pm</b>			

### SUCCESS AND STUDY TIPS

- Pay attention to the lectures and do not try and write down every word being said – this is not a useful exercise. I would treat the lectures as a story hour because that is what physiology is – a complicated story. If you were listening to a story and trying to understand it, you would not write down every single word being said. You would pay attention and try and understand what is being said. You may write down notes here and there to remind you of important points but that would be about it.
- Physiology is highly conceptual and every topics ties into the next one, so the course in many ways is one continuous concept, not a collection of fragmented concepts. Because of this, trying to memorize everything does not work (plus that approach is boring). When you study, use the objectives to help focus you on the topics to **understand**. There is a huge difference between memorizing something and

understanding it. Something that is understood can be thought about critically and applied to many other aspects of life which is what you will need to do as the course progresses. To accomplish this, read an objective and then try and explain it to a peer, a TA, or myself without notes. If you can truly explain it and then answer questions about it, then you understand the concept and have not just memorized it. If you do this, you will be successful in the course.

- 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 until you understand it – not memorize it.