

Physiology of Exercise and Training

Connect with HHP

APK3110C | Class #26133 | Credits | Spring 2025



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 AM – 10:30 AM. Individual meetings outside of these times are welcomed.

MEETING TIME/LOCATION

Meeting Time: M, W, F Period 2 (8:30 AM – 9:20 AM)

Location: TUR L011

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.

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

COURSE FORMAT

Students will attend live lectures three 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 sportspecific performance

Course & University Policies

ATTENDANCE POLICY

Although attendance is not required, it is ABSOLUTELY imperative for your success in this course. Students who have planned travel during this course are encouraged to register for a different semester if multiple days of class will be missed.

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

IN-CLASS RECORDINGS

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.

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.

ASSIGNMENT/EXAM MAKE-UP POLICY

In order for students to make-up any assignment 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 unlikely to be approved.

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. 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>

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.

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.**

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://my-ufl.bluera.com/>. 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, 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@hnp.ufl.edu
- Dr. Steve Coombes (he/him), APK Graduate Coordinator, scoombes@ufl.edu
- Dr. Joslyn Ahlgren (she/her), 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 800. If any evaluation component ends up having less or more 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 275 points)	% of Total Grade
Lecture Exams (3)	50 pts X 3 exams = 150 pts	150 / 275 = 54.5%
Lecture Quizzes	100 points	100 / 275 = 36.4%
Participation	25 points	25 / 275 = 9.1%

Lecture Exams – Each exam will consist of 50 questions, 1 point 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.*

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 100 quiz points throughout the semester but will be worth 36.4% 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.**

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).

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

Week	Dates	Book Chapter - Lecture Topic
1	Jan 13 – Jan 17	Chapter 3: Bioenergetics
2	Jan 20 – Jan 24	No Class on Monday, January 20 th – MLK day Chapter 3: Bioenergetics
3	Jan 27 – Jan 31	Chapter 3: Bioenergetics
4	Feb 3 – Feb 7	Chapter 7: Nervous System (Cell Structure and Membrane Potential)
5	Feb 10 – Feb 14	Chapter 8: Skeletal Muscle
6	Feb 17 – Feb 21	Exam 1 – Monday Feb 17 th Chapter 8: Skeletal Muscle; Chapter 4: Bioenergetics
7	Feb 24 – Feb 28	Chapter 4: Bioenergetics; No class Friday Oct 6th – Homecoming
8	Mar 3 – Mar 7	Chapter 9: Circulatory Response to Exercise
9	Mar 10– Mar 14	Chapter 10: Respiration During Exercise
10	Mar 17 – Mar 21	Spring Break
11	Mar 24 – Mar 28	Exam 2 – Monday Mar 24 th Chapter 10: Respiration During Exercise
12	Mar 31 – Apr 4	Chapter 10: Respiration During Exercise; No class Friday Nov 10 th
13	Apr 7 – Apr 11	Chapter 11: Acid-base Balance
14	Apr 14 – Apr 18	Chapter 5: Hormonal Response; No class Nov 22 nd – Nov 24 th – Thanksgiving

15	Apr 21 – Apr 23	Chapter 13: Aerobic and Anaerobic Training
Exam 4 (Ch. 16-19) – Thurs. May 1st 3:00 PM		

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.