

PHYSIOLOGY OF EXERCISE AND TRAINING

APK3110C ~ 3 CREDITS ~ SPRING 2022

INSTRUCTOR:

Lan Wei-LaPierre, Ph.D.

Office: FLG Room 120

Office Phone: 294-1754

Email: lweilapierre@ufl.edu

Preferred Method of Contact: Email through Canvas

OFFICE HOURS:

Mondays 2-3pm and Thursdays 3-3:55 pm, or by
appointment

MEETING TIME/LOCATION: FLG 0265; M,W,F | Period 6 (12:50 PM - 1:40 PM)

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.

Students: Please note that this course will be participating in the UF All Access program and therefore, you can purchase both print and electronic copies of the text at a discounted price.

Login and Opt-In to gain access to your required course materials - UF All Access will provide you with your required materials digitally at a reduced price and the charges will post directly to your student account, allowing any available Financial Aid funds to cover the cost of your materials. This option will be available starting 1 week prior to the first day of classes and ending 3 weeks after the first day of class.

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. Specifically, our class discussion will focus on an integrative approach toward understanding exercise physiology and incorporate a problem-based learning method that will emphasize the importance of critical thinking skills. Questions are encouraged at any time during the lecture.

Weekly assignments will be announced on Canvas and completed through the CONNECT platform offered by the publisher of the text. The Assignments aim to assist the students learning the key points of the course materials by reading and answering questions online. Completing all assignments in time may result in extra credits for the final grade.

In-class questions or topic discussions will also be implemented during classes. Active participation in class activities may result in extra credits for the final grade.

COURSE LEARNING OBJECTIVES: Following completion of this course, students are expected:

A. 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

B. 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 sport-specific performance.

COURSE AND UNIVERSITY POLICIES:

ATTENDANCE POLICY: **Class attendance is not mandatory.** However, missing class will likely have a negative impact on learning and therefore, could negatively influence your exam scores and final grade in the course. In addition, in class Q and A on the topics discussed on the day will be implemented by randomly selecting students to answer the questions, which is considered as part of class participation. Fail to attend the class may affect obtaining extra credits for participation (see below Grading section).

PERSONAL CONDUCT POLICY: Students are expected to exhibit behaviors that reflect highly upon themselves and our University. Moreover, students are expected to join the lecture on time, but tardiness is acceptable when personal conflicts require the

student to enter the lecture later than the scheduled time. Students are expected to be quiet and cause minimal disturbance to the class if entering the lecture room late.

Laptop computers and tablet devices for note taking are allowed to use during the course. Upon entry into the lecture, please silence your cell phone.

Failure to adhere to the UF Honor Code will result in disciplinary action by the university. UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions.

Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult the instructor in this class.

EXAM MAKE-UP POLICY: Make-up exams will be available for students that cannot take exams during the assigned period due to health problems or an emergency. Documentation of the illness or emergency will be required.

A student experiencing an illness or an emergency should visit the UF Student Health Care Center or their preferred healthcare provider to seek medical advice and obtain documentation. If you have an illness, family emergency or death, please contact the Dean of Students Office (www.dso.ufl.edu) and follow the DSO Care Team procedures for documentation and submission of a request for make-up assignment (<https://care.dso.ufl.edu/instructor-notifications/>). The DSO will contact the instructor. **Do not provide any documentation to the instructor regarding illness or family emergency. This is your personal and protected information. The DSO is qualified to receive and verify the documents you provide. The instructor will follow the recommendations from the DSO.**

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.

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 and 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 option 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. Rachael Seidler, APK Graduate Coordinator, rachaelseidler@ufl.edu
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, jahlgren@ufl.edu

GRADING:

Grades will be assigned based on points earned in the course. The point value of the four examinations and homework are as follows:

Evaluation Components (number of each)	Points Per Component	Approximate % of Total Grade
Lecture Exams (4)	22 pts each = 88 pts	88%
Homework (13)	0.92 pts each = 12pts	12%
Extra Credits	3 pts in homework, 2 pts for participation	0%

Total possible points in course = 105

Lecture Exams: There will be four exams given throughout the course of the semester. Exams will be worth 22 points (44 questions, 0.5 points each). The chapters that each exam covers are indicated in the Course Schedule. **There will be no cumulative exam at the end of the semester.** Exams will consist of multiple-choice questions and will be administrated through CANVAS with lockdown browser. Exam dates are listed on the course schedule page. Students are required to be physically present in the classroom with their computer ready for the exam (lockdown browser tested and working). All students must be present at the scheduled exam prior to any student completing the exam and leaving the examination room. Once any student has completed the exam and left the exam room, no late-arriving students will be admitted to the exam. **Study guides for the exams are the learning objectives provided for each lecture and the summaries for each session of the course lectures.**

Homework with extra points: Homework for this semester will be completed through the **CONNECT study platform SmartBook 2.0** offered by McGraw Hill, the publisher of the required text. Links to the homework will be posted on CANVAS and students can access the homework through CANVAS by clicking on the link to be directed to CONNECT. In order to use CONNECT, students must purchase the e-book with Connect access (UF All Access eligible). Due date for each homework will be posted on CANVAS. The function of the homework assignments is to get students more familiar with the textbook. **The homework 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. Completion of each homework will earn the students 0.23 point towards the final grade and completing all homework assignments will earn students extra 3 credits for the final grade. **In addition, please do NOT use the highlighted text in the SmartBook 2.0 as a guide to study for the exams.** All materials covered in the semester may appear as exam questions.

Extra credits through participation: In class discussions and “Q and A”s will be implemented to reinforce comprehension of the course material and promote participation/attendance. Actively participating in the discussion and being present

when called to answer questions may earn students extra 2 points for the final grade. Each time the students not being present when called to answer questions during classes will lose 0.5 extra point in the participation.

GRADING SCALE: Lecture exam scores and homework grades will be posted on the canvas course website typically within 48-96 hours after the date of the exam. Final grades in the class will be determined by the total points earned during the semester. Final point totals that are not whole numbers will be handled in the following way. Any point total with a fraction of another point will be rounded up if the fraction reaches 0.5 points or higher. More detailed information regarding current UF grading policies can be found here: <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.*

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	93.00-100%	4.0
A-	90.00%-92.99%	3.67
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:

Week	Dates	Lecture Topics	Chapter(s)
1	Jan 5-7	Introduction to Course History of Exercise Physiology	0
2	Jan 10-14	Common Measurements (Calculation activity) Control of Internal Environment Bioenergetics	1, 2, 3
3	Jan 17-21	Jan 17th -No class Martin Luther King Day Bioenergetics Cont'd Exercise Metabolism	3, 4
4	Jan 24-28	Exercise Metabolism Cont'd Cell Signaling & Hormonal Response to Exercise	4, 5

5	Jan 31-Feb 4	EXAM 1: Jan 31, Chapter 0-5	
		The Nervous System	7
6	Feb 7-11	Skeletal Muscle: Structure & Function	8
7	Feb 14-18	Circulatory Response to Exercise	9
8	Feb 21-25	EXAM 2: Feb 21, Chapter 7-9	
		Respiration during Exercise	10
9	Feb 28-Mar 4	Acid-Base Balance during Exercise Temperature Regulation	11, 12
10	Mar 7-11	No CLASS-SPRING BREAK	
11	Mar 14-18	Effect of Aerobic and Anaerobic Training Physiology of Resistance training	13, 14
12	Mar 21-25	NO CLASS-Self Study	
13	Mar 28-Apr 1	EXAM 3: Mar 28, Chapters 10-14	
		Exercise Prescription	16
14	April 4-8	Special Populations Nutrition & Body Composition	17, 18
15	April 11-15	Nutrition & Body Composition Cont'd	18
16	April 18-22	EXAM 4: April 18, Chapters 16-18	

SUCCESS AND STUDY TIPS:

Success in any university course requires dedication and hard work on the part of the student. Attending class regularly and studying on a daily basis is essential to excel in learning exercise physiology. Here are 8 tips for learning exercise physiology:

1. Learn the vocabulary of exercise physiology
2. Don't just memorize-learn concepts and principles of exercise physiology
3. Read the chapter before class
4. Go to class and focus on key points presented in the lecture

5. Ask the instructor questions if you don't understand a concept presented during the lecture.
6. Study daily-start small and learn sections of material in the text (don't get overwhelmed by reading the entire chapter)
7. Review material in small section over and over again-start with a blank sheet of paper and draw and/or write out the answers to study questions assigned for each chapter
8. Develop problem solving skills and improve your critical thinking about exercise physiology concepts.