**##**Advanced Physiology of Exercise I KINE 7680

Course Description

This is a graduate level overview of physiology as it relates to exercise. We will cover a wide variety of topics including muscle structure and function, bioenergetics, and cardiovascular changes with exercise and training.

Course Objectives

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

1. understand how muscles work during exercise and adapt to training
2. understand the process and issues involved in using fuels during exercise and adapt to training
3. appreciate the involvement of hormones in fuel usage during exercise
4. understand cardiovascular responses to exercise and adaptations to exercise training

Professor

Instructor: Dr. Heidi Kluess

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Email: hak0006@auburn.edu

Office Hours: MW 7-7:45AM in person, or by appointment (zoom or in person)

Textbook

Exercise Physiology: Theory and Application to Fitness and Performance, 9th or later Edition, by Scott K. Powers and Edward T. Howley, McGraw-Hill Education, New York, 2017. ISBN-13: 978-1259870453; ISBN-10: 1259870456

Grading

For the lecture portion of the class:

Quizzes: variable pts ………………………………………......60 points

In class discussons .........................................................10 points

On line discussions ………………………………….......……. 20 points

Journal Club .....................................................................10 points

Final Exam…………………………………………………......…… 10 points

**TOTAL FOR CLASS** …………………………………………...... 100 points

I put grades on Canvas for your information. This is not an accurate reflection of the points for the class. For example, I will give you 1 point for every discussion and journal club entry, but these assignments will be worth the number of assignments / the number of points above.

This syllabus serves as a contract to identify what is required for a given course grade. Each student is welcome to engage in open discussion with the instructor about matters of clarification/alteration.

A: 90 - 100 points                    D: 69.99 - 60.0 points

B: 89.99 - 80.0 points              F: < 60.00 points

C: 79.99 - 70.0 points

Policies

***This class is taught as a flipped classroom. This means that lectures will be taught outside of class. We will have brief periods of open discussion questions. Your participation, in a meaningful way, to discussions is required for full points in the class. You may post an answer to the question or a new question about the material. The question must be related to the original prompt. During class time we will engage in meaningful discussions of the course materials.***

Lectures, discussion questions and quizzes are posted in the modules. It is your responsibility to keep up with this class. The schedule for each day is on the  first page of every module.

***Quizzes on Canvas****:* You may use whatever materials that you would like to complete the quiz, but  you must complete the quiz within the time period indicated on the quiz. Copying and pasting from google or other sources is strongly discouraged.

You may not consult with  another student while you are taking the exam. Any evidence to suggest that this may have occurred will be considered an academic honesty violation (see below).

\*\*\* Computer issues sometimes do occur, so please plan ahead and take the quiz well before the deadline for that week. Failure to take the quiz will result in a zero.

If you do have a computer failure (freezing up, etc) you must contact me IMMEDIATELY via e-mail (immediately =within 2 hrs of the deadline). On the next work day, I will reset the quiz to give you another shot. You will have 24hrs from the time I send the e-mail to complete the exam.

Course Style

I have posted short lectures in the modules. You may view several lectures per week.

I will teach from the classroom and I encourage students to attend.  You will have online discussion questions for most lectures (due 1 day before we discuss the lecture in class). The purpose of the discussions (online and in person) is to help you interrogate the material and make sure you have a complete understanding. The value of both online and in class discussions is that you get to interact with me and your peers with regard to discussion of the information. You may respond to discussion prompts with a question or your own or an answer to the question asked. Your answer does not have to be complete. The purpose is to generate thinking on the topics. For the online discussions, I will respond to each comment with some suggestions. I like very thoughtful and detailed answers, so my prompt may often be to explain more completely.

**Journal Club:** This will be a group assignment. You may make your own groups or I can assign you a group. Groups should be between 2-3 students. Journal clubs will be every Wed and one group will be assigned per week. The group will be responsible for choosing a current, primary manuscript (no reviews) on an exercsie physiology topic. The pdf of the paper must be sent to my email no later than 1 week before your journal club is scheduled. During your assigned journal club, your group will be responsible for leading the class through a discussion of the paper. The class will then be responsible for posting questions on the discussion board (due Thurs after the journal club) for the responsible group to answer (due Sun after the journal club).

Academic Integrity

**Academic Integrity Policy:**The Auburn University student academic honesty code Title XII ([https://sites.auburn.edu/admin/universitypolicies/Policies/AcademicHonestyCode.pdfLinks to an external site.](https://sites.auburn.edu/admin/universitypolicies/default.aspx)) applies to this class. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee. You may not collaborate with other students on Quizzes.

 (Links to an external site. applies to this class. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee. All quizzes must be the work of the individual. Sharing questions or answers is a violation of the academic honesty code.

Disability Accomodations

Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. If you have not established accommodations through the PSD office, but need accommodations, make an appointment with The Program for Students with Disabilities, 1228 Haley Center, 844-2096 (V/TT).

Professionalism

As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below: Engage in responsible and ethical professional practices

o Contribute to collaborative learning communities

o Demonstrate a commitment to diversity

o Model and nurture intellectual vitality

University class cancellation

Should the University cancel classes due to weather or other type of emergency, please see Canvas and your auburn e-mail for assignments.

Participation

This class is taught as a flipped classroom, therefore, attendance in class is critical for your complete understanding of the material.  I appreciate that University approved excused absences do occur. Please let me know your reason within 1 class period of the absence.

Please do the following in the event of an illness or COVID-related absence:

* Notify me in advance of your absence, if possible
* Provide me with medical documentation, if possible
* Keep up with coursework as much as possible
* Participate in class activities and submit assignments remotely as much as possible
* Notify me if you require a modification to the deadline of an assignment or exam
* Finally, if remaining in a class and fulfilling the necessary requirements becomes impossible due to illness or other COVID-related issues, please let me know as soon as possible so we can discuss your options.

Schedule

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| --- | --- | --- | --- |
| Date | topic | Class meetings | assignment |
| 1/10 W | The muscle, Ch 8 | Class meets | Lect 1,2 |
| 1/12 F | The muscle |   |   |
| 1/15 M | No class MLK day |   |   |
| 1/17 W | The muscle | Class meets | Discuss Lect 1,2, Quiz 1 Sun 1/21 |
| 1/19 F | The muscle |   |   |
| 1/22 M | The muscle | Class meets | Discuss 3,4, 5 |
| 1/24 W | The muscle | Class meets | Journal club 1, Quiz 2, due Sun 1/28, discuss lect 6 |
| 1/26 F |   |   | Post and answer journal club Q |
| 1/29M | Dr. Kluess out, Bioenergetics |   | Lect 1,2 |
| 1/31 W |   | Class meets | Discuss lect 1,2, Journal club 2 |
| 2/2 F |   |   | Post and answer journal club Q |
| 2/5 M | Bioenergetics | Class meets | Discuss Lect 3, Quiz 3a due Sun 2/11 |
| 2/7 W | Bioenergetics | Class meets | Discuss lect 4, Journal club 3 |
| 2/9 F | Bioenergetics |   | Post and answer journal club Q, |
| 2/12 M | Bioenergetics | Class meets | Discuss lect 5,6 |
| 2/14 W | Bioenergetics | Class meets | Journal club 4 |
| 2/16 F | Bioenergetics |   | Post and answer journal club Q, Quiz 3B due Sun 2/18 |
| 2/19 M | The nervous system | Class meets | discuss lecture 1,2 |
| 2/21 W | The nervous system | Class meets | Discuss lect 3, journal club 5 |
| 2/23 F | The nervous system |   | Post and answer journal club Q |
| 2/26 M | The nervous system | Class meets | Discuss lect 4,5 |
| 2/28 W | The nervous system | Class meets | Review, journal club 6 |
| 3/1 F |   |   | Post and answer journal club Q, Quiz 4 due 3/3 |
| 3/4 M | Spring Break |   |   |
| 3/6 W | Spring Break |   |   |
| 3/8 F | Spring break |   |   |
| 3/11 M | Hormones, Ch 5 | Class meets | Discuss Lect 1,2 |
| 3/13 W | Hormones | Class  meets | Discuss lect 3, Journal club 7 |
| 3/15 F | Hormones |   | Post and answer journal club Q |
| 3/18 M | Hormones | Class meets | Discuss Lect 4,5 |
| 3/20 W | Hormones | Class meets | Journal club 8 |
| 3/22 F | Hormones |   | Post and answer journal club Q, Quiz 5 due Sun 3/24 |
| 3/25 M | VO2max  Ch 9 and 13 | Class meets | Discuss Lect 1,2 |
| 3/27 W | VO2max | Class meets | Discuss Lect 3, Journal Club 9 |
| 3/29 F | VO2max |   | Post and answer journal club Q |
| 4/1 M | VO2max | Class meets | Discuss Lect 4,5 |
| 4/3 W | VO2max | Class meets | Discuss Lect 6, Journal Club 10 |
| 4/5 F | VO2max |   | Post and answer journal club Q, Quiz 6 due 4/7 |
| 4/8 M | Thermoregulation | Class meets | Discuss lect 1,2 |
| 4/10 W | Thermoregulation | Class meets | Journal club 11, Quiz 7 due 4/14 |
| 4/12 F | Thermoregulation |   | Post and answer journal club Q |
| 4/15 M | Respiration | Class meets | Discuss lect 1,2 |
| 4/17 W | Respiration | Class meets | Discuss lect 3 |
| 4/19 F | Respiration |   | Quiz 8 due Sun 4/21 11:59PM |
| 4/22 M | Review for final exam | Class meets |   |
| 4/24 W | Review for final exam | Class meets |   |
| 4/26 F | Review for final exam |   | Study for final exam |
| 4/29 M | Final exam | Due 10AM |   |