

**KINE 5314: Advanced Exercise Physiology**  
**Sections: 060 (online) and 001 (MW 9:05-10:00am)**  
**Spring 2026**

**Instructor:** David S. Criswell, Ph.D.

**Office:** HPC 3065

**Phone:** (903) 566-7178

**E-mail:** [dcriswell@uttyler.edu](mailto:dcriswell@uttyler.edu)

**Office Hours:** MW, 10:00-11:30am, or by appointment. E-mails will generally be answered within one business day.

***Course Structure and Delivery***

Canvas will be used to deliver course content in this class. You can access Canvas through the *UT Tyler Logins* link at the top of the UT Tyler main website (you will need your ID and password). Important class resources, including the syllabus, course schedule, announcements, and external links, as well as the weekly modules, will be accessed here.

The content of this course is organized into modules, which are accessed in the **MODULES** tab in Canvas. Within each *module*, you will find assigned readings, recorded lectures with pdf lecture notes, practice questions, and other items related to that section of material.

*Technical requirements:* There are minimum technological requirements that must be met in order to complete this course. If you have technical problems, please review the UT Tyler Technical Support page (<https://www.uttyler.edu/offices/information-technology/>).

***Required text:***

Powers and Howley, Exercise Physiology: Theory and Application to Fitness and Performance, 12<sup>th</sup> Edition, McGraw Hill., 2024. (ISBN# 978-1264529813)

***Course Description:*** This course is designed to give the student a thorough understanding of energy production and the control of the energy systems, especially as they relate to exercise. Other topics to be discussed include lactate accumulation during exercise, effect of muscle fiber type on substrate utilization, ventilation during exercise, and adaptations to aerobic and anaerobic exercise.

You are expected to have a thorough understanding of basic human physiology and an undergraduate exercise physiology course is a prerequisite for this class.

***Course Objectives:*** Objectives to UT Tyler's Master's degree program in Kinesiology include: Graduates will be able to—

1. Critically read and discuss published research related to kinesiology.
2. Discuss in writing issues related to kinesiology, identifying, analyzing and defending different viewpoints.

This course will address these objectives through the following:

1. Study of basic facts, concepts and theories of exercise physiology.
2. Critically reading and discussing research related to exercise physiology.
3. Discussing in writing questions and viewpoints related to exercise physiology, analyzing and supporting viewpoints based on research evidence.
4. Accessing information related to exercise physiology and communicating effectively about exercise physiology.

**Examinations:** There will be two exams, a mid-term and a final. Both of these exams will be short-answer or discussion format and will be given via Canvas at specified dates and times. Although you will have access to your book and notes for the exams, they will be timed so a thorough knowledge of the material will be essential for success. In other words, if you don't know the answers to the questions when you begin the test, you will not have time to look them up during the test.

**Class Project:** There will be a writing assignment in which students will assess the literature on an assigned topic related to exercise physiology. The format of this assignment is very important. You must follow the instructions exactly to obtain full credit for this assignment.

**Practice Questions:** Most modules will include practice questions from the material being covered. Each set of questions will have a due date when you should complete the assigned questions in Canvas. The questions are intended to prepare you for the exams. Therefore, do not underestimate their importance despite their relatively low weight towards your final grade.

<b>Grading:</b>	Mid-Term Exam	20%	<b>Grading Scale:</b>	A -- 90% and up
	Final Exam	30%		B -- 80% to 89% ( $\geq 86 = B+$ )
	Class Project	30%		C -- 70% to 79% ( $\geq 76 = C+$ )
	Readings	10%		D -- 60% to 69%
	Practice Questions	10%		F -- below 60%

Quality of work: All assignments, including exams and writing assignments, will be graded with rigor appropriate for graduate course work. All written assignments and correspondence should incorporate correct grammar, spelling, and a logical flow of ideas. Bad grammar, incorrect or lack of punctuation, incorrect spelling, etc. will result in loss of deduction of points. (Yes, that means using incorrect grammar and/or spelling in an e-mail message could hurt your grade in the course! Please proof-read everything you send to me.)

Policy regarding late submission of an assignment: No assignments will be accepted past their deadlines.

Make-up work: Make-up exams and assignments will be given only according to University policy. On rare occasions (and for a valid reason), make-up exams can be scheduled by pre-arrangement with the instructor *before* the date of the exam. If any exam is missed due to illness, injury, or family emergency, the instructor should be notified prior to or within 24 hours of the missed exam.

Feedback on exams/assignments: I will strive to give timely feedback on all assignments. You should expect feedback on assignments, papers, and exams within 1 week (I will notify you if I expect feedback to take a little longer for a particular assessment).

Getting help: If you find yourself struggling in the class (especially if you fail an exam), you should contact me as soon as possible so that we can determine what steps you need to take to succeed in the class. I'm available for personal meetings by appointment, or correspondence by e-mail.

If you have trouble with writing assignments, please contact the Writing Center on campus at 903- 565-5995. They have tutors and other resources available to assist you with your written assignments.

***Time Requirements:*** Successful on-line learning is highly student-initiated. Because of the format of the course, the student will be required to exercise initiative and diligence in completing the course. In general, you should expect to spend a similar amount of time completing the requirements of this online course as you would spend on the same course taught in the traditional classroom format. An advantage of the online format is that the lecture material is there for you to review whenever you want. In an online course, more time must be devoted to participation in discussions than is traditionally spent in classroom discussions. Time for completion of assignments, readings and other materials, reviewing for comprehension, and preparing for exams should be similar in this online course as in any other course. As a rough guide, you should plan to spend approximately 15 hours per week on this course. The actual amount of time required will, of course, vary from one person to another. It is absolutely essential that you not fall behind.

Although this is an asynchronous course, it is best to follow the timeline outlined in the course schedule (last page of syllabus). Questions associated with the lectures and reading assignments to evaluate will be sent out over the course of the semester, along with a deadline for submission of your answers. It is up to you to keep up with these assignments. There will be set dates for the final exam and deadlines by which you must complete all reading assignment evaluations. You will be notified of these deadlines in the Announcement section of Canvas, as well as by e-mail.

### ***Course Communication:***

#### ***Announcements***

I will post Announcements frequently during the semester. You will be able to see these announcements on your course portal page. Please check these frequently so you do not miss any important information.

#### ***E-mail communication/feedback from me to you***

E-mail communications will be sent through the Canvas course web site. You are responsible for knowing course information sent via announcements and emails sent through the Canvas site, so check it frequently. Due to teaching and research loads and the size of this class, it may take me 1 to 2 business days to respond to e-mail; however, I'll make every effort to respond to e-mail on the same day.

#### ***E-mail communication from you to me***

If you email me without going through the Canvas site, please include the course number in the subject line. E-mail messages should be written in letter format using proper English grammar, punctuation, and spelling. If you do not include your name at the end of the message, the message will be discarded without reply.

### ***Academic Dishonesty***

At The University of Texas at Tyler students and faculty are responsible for maintaining an environment that encourages academic integrity. Students and faculty members are required to report an observed or suspected case of academic dishonesty immediately to the faculty member in charge of an examination, classroom or laboratory research project, or other academic exercise.

Since the value of an academic degree depends on the absolute integrity of the work done by the student for the degree, it is imperative that students maintain a high standard of individual honor in scholastic work. Scholastic dishonesty includes but is not limited to cheating, plagiarism, and collusion.

"Cheating" includes:

1. Copying from the paper of another student, engaging in written, oral or any other means of communication with another student, or giving aid to or seeking aid from another student when not permitted by the instructor;
2. Using material during an examination or when completing an assignment that is not authorized by the person giving the examination or making the work assignment;
3. Taking or attempting to take an examination for another student, or allowing another student to take an examination for oneself;
4. Using, obtaining, or attempting to obtain by any means, the whole or any part of, an unadministered examination or work assignment.

"Collusion" includes the unauthorized collaboration with another person in preparing written work that a student offers for credit.

"Plagiarism" includes the unacknowledged incorporation of the work of another person in work that a student offers for credit.

If you have any questions regarding plagiarism, please consult Chapter 8 of the Student Affairs Manual of Policy and Procedures. (<https://www.uttyler.edu/mopp/documents/8-student-conduct-discipline-final.pdf>)

This class will be conducted in full compliance with the UT Tyler "no tolerance" policies concerning documented cases of plagiarism and/or academic dishonesty. Any act of cheating or plagiarized work submitted will result in a grade of zero for that assignment and further disciplinary action may be taken. Please make use of the UT Tyler Writing Center if you have concerns about plagiarism.

**Copyright:** All handouts used in this course, including those delivered via Canvas, are copyrighted. The term "handouts" refers to all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, assignment sheets, recorded lectures, outlines, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.

## **ARTIFICIAL INTELLIGENCE RESOURCES**

All work submitted for this course must be your own. I have carefully designed all assignments and class activities to support your learning. Doing your own work, without human or artificial intelligence assistance, is best for your efforts in mastering course learning objectives. For this course, I expressly forbid using ChatGPT or any other artificial intelligence (AI) tools for any stages of the work process, including brainstorming. Deviations from these guidelines will be considered a violation of UT Tyler's Honor Code and academic honesty values.

## **UNIVERSITY POLICIES and STUDENT RESOURCES**

<https://www.uttyler.edu/academicaffairs/files/syllabuspolicy.pdf>

## KINE 5314 – Schedule

Weeks	Topics	Chapter
#1	Introduction; Basic Principles; Ergometry and Calorimetry	Ch. 1
#2	Control of the Internal Environment; Blood Glucose Homeostasis	Ch. 2
#3	Bioenergetics; Glycogenolysis and Glycolysis	Ch. 3
#4	Oxidative Phosphorylation; ATP Supply and Demand During Exercise	Ch. 4
#5	Cell Signaling and the Hormonal Responses to Exercise; Exercise and the Immune System	Chs. 5 & 6
#6	The Nervous System and the Control of Movement <i>(Mid-Term Exam covers chapters 1-7)</i>	Ch. 7
#7	Skeletal Muscle Morphology and Physiology; Muscle Fiber Types; Muscle Biophysics	Ch. 8
#8	Eccentric Contractions and Contraction-Induced Muscle Damage.	Notes
#9	Cardiovascular Structure and Function; CV Responses to Exercise	Ch. 9
	<b><i>Spring Break</i></b>	
#10	Cardiovascular Limitations to Exercise	Ch. 9 and notes
#11	Pulmonary Ventilation and Exercise	Ch. 10
#12	Acid-Base Balance during Exercise	Ch. 11
#13	Pulmonary Limitations in Health and Disease	Notes
#14	Temperature Regulation	Ch. 12
#15	Review	
	<b>Final Exam</b> (specific day TBD)	