EXERCISE PHYSIOLOGY LAB

Instructor: Scott A. Spier, Ph.D. | HPC 2186 | sspier@uttyler.edu

Course Sections

All sections meet in HPC 2185

001: Mon 10:10 am - 12:00 pm

002: Mon 2:30 - 4:20 pm

003: Wed 9:00 - 10:55 am

Office Hours

- M 1:00 - 2:00 p.m.
- W 11:00 a.m. - 1:00 p.m.
- Also by appointment

Course TA

Mateus Pedroso (mpedroso@uttyler.edu)

Required Materials

There is no required textbook for this course.

The following are required for each lab meeting:

- Exercise clothing and athletic/running shoes
- Lab worksheets (provided in Canvas)

All course content and assignments will be delivered through Canvas. Students are responsible for accessing lab content in Canvas and completing any pre-lab work before the week's lab activity.

About This Course

The primary goal of this course is to complement KINE 3311 by (a) reinforcing basic exercise physiology concepts via application, (b) increasing awareness of laboratory tests and measurements commonly used in exercise physiology studies of humans, (c) developing selected laboratory skills, and (d) practicing collection, evaluation, and reporting of data.

Course Prerequisites/Corequisites

Prerequisites: BIOL 2301/2101; BIOL 2302/2102, KINE 3306

Corequisite: KINE 3311 Physiology of Exercise (lecture)

Student Learning Outcomes

Students who successfully complete this course will be able to:

- Demonstrate lab skills commonly used in exercise testing
- Apply exercise physiology concepts to real-world examples
- Explain selected physical fitness test procedures and results of fitness tests in relation to norms
- Describe the importance of accurate data and limitations of collection of data from human subjects in research related to problems in exercise physiology

Tips for Success

- Read the material and learn the definitions before the lab meeting. Use class time to understand complex processes rather than as your first look at the basic facts. Then, review the material after class.
- Write down questions about difficult concepts and ask those in class. Chances are that most students have the same questions.
- Memorize the equations and conversion factors.
- On written assignments and essay questions, err on the side of explaining your answer in *too much* detail rather than *not enough*.
- Don't wait until the last minute to complete your work.
- Be aware of all due dates.
- If you find yourself struggling in the class or are unsure of any concepts, ask me after class, during office hours, or make an appointment with me to discuss the problem further.

Communication

Any email you send me should have your first/last name, course/section number (e.g., KINE 3112.001), and proper punctuation. Failure to do so may delay my response time. I will try to respond to emails within 1-2 business days.

Course Expectations

Professionalism: Students are expected to display a professional attitude in all aspects of the course, including online discussions, communication with the instructor and classmates, being attentive during lectures and demonstrations, and participating in lab activities.

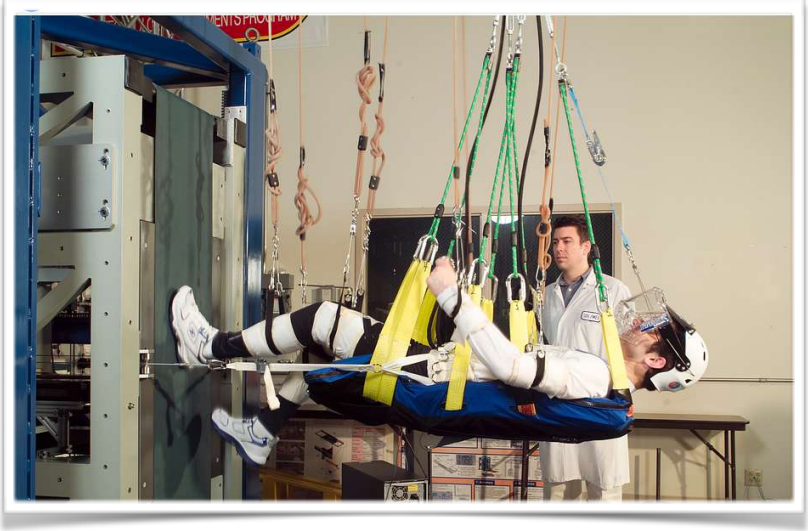
Quality of work: All assignments will be graded with rigor appropriate for upper-level undergraduate course work. All written assignments should incorporate correct grammar, spelling, and a logical flow of ideas. All work submitted is expected to be original and your own. Any act of cheating or plagiarism will not be tolerated.

Late work: Assignment instructions and due dates will be clearly posted and students will be given adequate time to complete work. There are significant penalties for late work. Make sure you upload the correct file on time.

Makeup policy: Due to the participation element of this course, attendance is required. Making up missed work will be allowed ONLY according to University policies regarding attendance and will require documentation within 48 hours.

Safety: All safety rules given in class or in Canvas must be followed. Disobeying these rules can lead to serious injury to you or your classmates.

Food and drinks: No food or drink is allowed in the lab, other than water in a sealed non-glass bottle.



Assignments

Lab Assignments.....60%
Lab Midterm.....15%
Lab Final.....15%
Research Article.....10%

Course Grading

89.5 - 100 A (excellent)
79.5 - 89.49 B (above average)
69.5 - 79.49 C (average)
59.5 - 69.49 D (below average)
< 59.5 F (poor/fail)

Technical Support

For technical problems with Canvas, contact ***UT Tyler 24/7 Canvas Support***, which can be accessed by clicking ***Help*** at the bottom of the Global Navigation menu on the far left side of the browser window.

For login/password problems or support for other technical issues, contact ***Campus Computing Services*** in the Business Building (BUS 101) at 903-565-5555 or itsupport@uttyler.edu.

Evaluation

Lab Assignments (60%): For each lab, you will complete one or more assignments related to the concepts, procedures, and data collected in the lab meeting. Assignments are due by 11:59 p.m. the night before your next lab (i.e., one week). In order to complete the lab assignments, you must be present and participating in the lab activities. Lab assignments will be completed in Canvas.

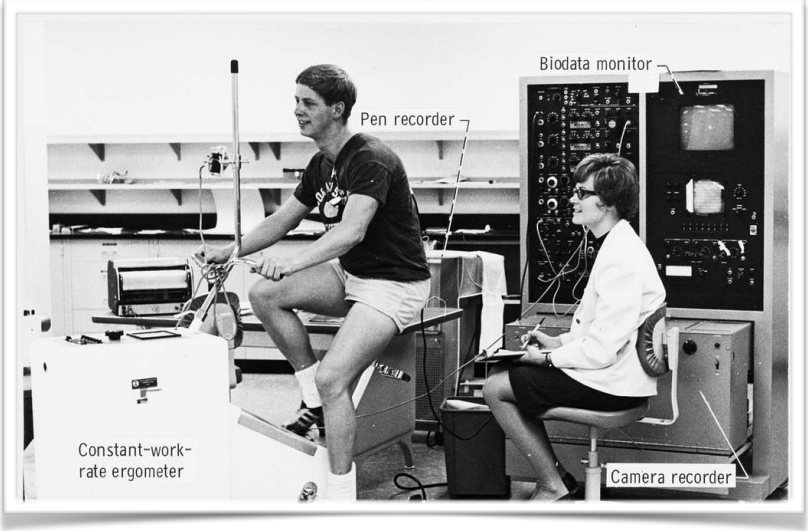
Lab Exams (30%): There will be two lab exams given during the semester. They will test you on important concepts and procedures learned in the course. The exams will be given in class and you may use your lab notes to complete the exam.

Research Article Critique (10%): Each student will be required to write a summary/critique of a recent original research article relevant to exercise physiology. Instructions and a rubric for this assignment will be provided in Canvas.

Participation: Students are required to actively participate as a subject and/or technician in each lab in order to receive credit for lab assignments.

Use of Chat GPT and Other AI Sources

Under no circumstances is a student allowed to use any AI-based writing program to generate answers to exams, quizzes, assignments, homework, or any other graded assignment in this course. Any use of AI will be considered cheating according to the Academic Dishonesty policy (see next page).



Course and University Policies

Sharing of Course Materials

Handouts used in this course, including those delivered via Canvas, may NOT be shared online or with anyone outside of the class, without me granting express written permission. 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. The unauthorized sharing of class materials outside of the class constitutes academic dishonesty and disciplinary action may be taken (see below).

UT Tyler Policy on 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, 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.

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. Extreme cases or repeated violations may result in an F in the course and/or exclusion from the university. Please make use of the UT Tyler Writing Center if you have concerns about plagiarism.

UT Tyler Policy on Artificial Intelligence (AI)

UT Tyler syllabus statement: UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

MY POLICY: Use of AI to generate answers to exams, quizzes, assignments, homework, or any other graded assignment in this course is not permitted in this course.

Additional Student Resources and University Policies are provided in the Syllabus Module in Canvas

Tentative Course Schedule

Note: The following schedule is *tentative* and may be adjusted, as needed, during the semester to better serve the educational needs of those enrolled in the class. Any modifications to the schedule will be posted in the Canvas Announcements.

	Lab Activity	Will you exercise?
Week 1 **(Aug 25-29)**	**Introduction / Pre-screening (in Canvas)** *Assignment (Canvas): Pre-screening forms*	No
Week 2 **(Sep 1-5)**	**No Lab meeting (Labor Day holiday)**	
Week 3 **(Sep 8-12)**	**Lab 1 - Ergometry (In lab)** *Assignment (Canvas): Ergometry*	✅ (Light)
Week 4 **(Sep 15-19)**	**Lab 2 - Anaerobic Power & Capacity (In lab)** *Assignment (Canvas): Anaerobic Power & Capacity*	✅ (Intense)
Week 5 **(Sep 22-26)**	**Lab 3 - Skeletal Muscle Contraction (In lab)** *Assignment (Canvas): Skeletal muscle contraction*	✅ (Light)
Week 6 **(Sep 29-Oct 3)**	**Lab 4 - VO_2 Response to Exercise/ACSM Metabolic Equations (In lab)** *Assignment (Canvas): ACSM Metabolic Equations*	✅ (Moderate)
Week 7 **(Oct 6-10)**	**Lab 5 - Estimation of VO_2max (In lab)** *Assignment (Canvas): Estimation of VO_2max* **Lab Midterm Exam (in Canvas) - due Sun, Oct 19**	✅ (Moderate)
Week 8 **(Oct 13-17)**	**Lab 6 - Elite Endurance Performance (in Canvas)** *Assignment (Canvas): Elite Endurance Performance*	No
Week 9 **(Oct 20-24)**	**Lab 7 - Measurement of VO_2max/RER (In lab) - volunteers needed** *Assignment (Canvas): Measurement of VO_2max*	✅ (Intense)
Week 10 **(Oct 27-31)**	**Lab 8 - Cardiovascular Response to Exercise (In lab)** *Assignment (Canvas): Cardiovascular Response to Exercise*	✅ (Moderate)
Week 11 **(Nov 3-7)**	**Lab 9 - Lactate/Ventilatory Thresholds (In lab)** *Assignment (Canvas): Lactate/Ventilatory Thresholds* *Submit Research Article for Approval (due Nov 7)*	✅ (Mod/Intense)
Week 12 **(Nov 10-14)**	**Lab 10 - Muscular Fitness Assessments (In lab)** *Assignment (Canvas): Muscular Fitness Assessments*	✅ (Mod/Intense)
Week 13 **(Nov 17-21)**	**Lab Final Exam (In lab)**	
Nov 24-28	***Thanksgiving Break (No Labs)***	
Week 14 **(Dec 1-5)**	**Research Article Critique Due Friday, Dec 5** *No labs*	