

ENVIRONMENTAL EXERCISE PHYSIOLOGY

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

Course Sections

060: Online (Canvas)

001: M 12:30-1:50

*All course content will be delivered in Canvas

Office Hours

- Mon 12 - 2
- Wed 12-2 and 4-5
- Also by appointment (email to schedule)

Course Materials

Recommended Textbook:

Advanced Environmental Exercise Physiology (2nd edition, Human Kinetics) by Cheung and Ainslie

Assigned Readings: Research articles will be assigned in most modules. Some of these readings will provide background for the lectures while others will serve to further our discussion of the particular topic of study for that module.

About This Course

Environmental factors (e.g., temperature and humidity, hypoxia, atmospheric pressure, pollution, etc.) can have a considerable effect on physiological responses to acute exercise and on physiological adaptations to exercise training. This course provides the student with a comprehensive understanding of how these environmental factors affect the physiological response to exercise. In particular, acute physiological responses to heat, cold, altitude, microgravity, hyperbaric environments, and sleep deprivation, as well as adaptations to these environments, will be discussed thoroughly.

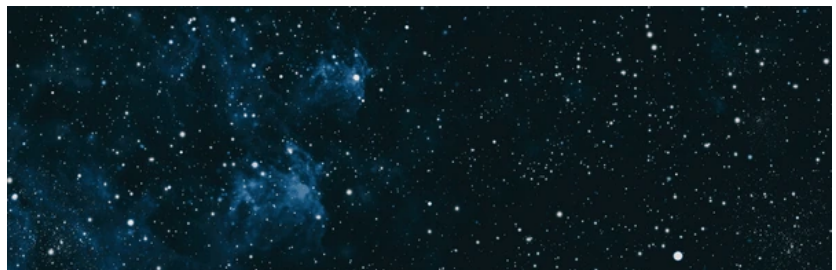
Course Prerequisites/Corequisites

None, although it is assumed that every student has successfully completed courses in *Anatomy & Physiology* and *Exercise Physiology* at the undergraduate level.

Student Learning Outcomes

Students who successfully complete this course will be able to:

- Describe the physiological responses and potential adverse reactions to hot and cold environments and the effect of these environments on exercise performance
- Describe the physiological responses and potential adverse reactions to a hyperbaric environment
- Describe the physiological responses and potential adverse reactions to a hypoxic environment and the effects of this on exercise performance at altitude and sea level
- Describe the physiological adaptations and potential adverse reactions to microgravity and the consequences of these adaptations upon return to Earth



Course Structure

Course content will be delivered on Canvas. This course is similar to a traditional on-campus class in that it will consist of lectures, readings, review of research literature, assignments, quizzes, and/or exams. In contrast to an on-campus class, assignments in this course will be completed asynchronously. In other words, there will be no scheduled meeting times. You may access content at your convenience, though you still must meet assignment deadlines.

Communication

Announcements: These will be posted in Canvas periodically during the semester. Please check these frequently so you do not miss any important information.

Email: Any email you send me should have your first/last name, course/section number (e.g., KINE 5318.060), and proper punctuation. Failure to do so may delay my response time. I will try to respond to emails within 1-2 business days. Please note that emails received on the weekends (late Friday afternoon through late Sunday) will generally be responded to on the following Monday.

Course Expectations

Professionalism: Students are expected to display a professional attitude in all aspects of the course, including online discussions and communication with the instructor and classmates.

Quality of work: All assignments will be graded with rigor appropriate for graduate 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: Since completion of some assignments in this course depends on the completion of previous assignments (e.g., discussion posts), it is imperative that you submit your assignments on time. There will be a one-hour grace period for late written assignments; late work submitted after this grace period will incur a 25% penalty for each day it is late.

Makeup policy: 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 discussion posts within a couple of days and feedback on 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, you should meet with me as soon as possible so that we can determine what steps you need to take to succeed in the class. I'm available during my office hours or by appointment. I also have an open door policy.

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.

Assignments

Module Assignments.....	40%
Module Quizzes.....	30%
Exams (2).....	30%

Course Grading

A: 89.5 - 100
B: 79.5 - 89.49
C: 69.5 - 79.49
D: 59.5 - 69.49
F: < 59.5

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

Assignments (40%): For each module, you will complete an assignment related to the concepts presented in that module. These assignments allow you to demonstrate your comprehension and application of the course material and your ability to express that comprehension through written communication. Unless otherwise specified, assignments are due by 11:59 p.m. Sunday night, the week that the module is assigned (i.e., in one week).

Quizzes (30%): Each module will require you to complete an untimed quiz over the material in that module. You may use your notes and reading assignments to complete the quizzes.

Exams (30%): There will be a timed, closed-notes, proctored midterm and final exam. The final exam is not comprehensive.

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).

Time Management

Although this is an asynchronous course, this is not an individually paced course. Access to course materials, assignments, quizzes, and the like will follow a schedule spread out over the semester (similar to a traditional format).



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, to better serve the educational needs of students. Any modifications to the schedule will be posted in the Canvas Announcements.

Week 1 (Aug 24-28)	Module 1- Introduction to Environmental Exercise Physiology <i>Assignment (Canvas): Student Introductions</i>
Week 2 (Aug 31-Sep 4)	Module 2 - Heat Stress <i>Assignments (Canvas): Module 2 Assignment Module 2 Quiz</i>
Week 3 (Sep 7-11)	Module 3 - Adaptations to Heat <i>Assignments (Canvas): Module 3 Assignment Module 3 Quiz</i>
Week 4 (Sep 14-18)	Module 4 - Hydration Strategies <i>Assignments (Canvas): Module 4 Assignment Module 4 Quiz</i>
Week 5 (Sep 21-25)	Module 5 - Physiological Responses to Cold <i>Assignments (Canvas): Module 5 Assignment Module 5 Quiz</i>
Week 6 (Sep 28-Oct 2)	Module 6 - Physiological Responses to Hyperbaric Conditions (Diving) <i>Assignments (Canvas): Module 6 Assignment Module 6 Quiz</i>
Week 7 (Oct 5-9)	Midterm Exam (Modules 1 - 6)
Week 8 (Oct 12-16)	Module 7 - Physiological Responses to Acute Hypoxia (Altitude) <i>Assignments (Canvas): Module 7 Assignment Module 7 Quiz</i>
Week 9 (Oct 19-23)	Module 8 - Physiological Responses to High/Extreme Altitude <i>Assignments (Canvas): Module 8 Assignment Module 8 Quiz</i>
Week 10 (Oct 26-30)	Module 9 - Altitude Training and Sea-Level Performance <i>Assignments (Canvas): Module 9 Assignment Module 9 Quiz</i>
Week 11 (Nov 2-6)	Module 10 - Physiological Responses to G-Forces <i>Assignments (Canvas): Module 10 Assignment Module 10 Quiz</i>
Week 12 (Nov 9-13)	Module 11 - Physiological Responses to Microgravity I <i>Assignments (Canvas): Module 11 Assignment Module 11 Quiz</i>
Week 13 (Nov 16-20)	Module 12 - Physiological Responses to Microgravity II <i>Assignments (Canvas): Module 12 Assignment Module 12 Quiz</i>
Week 14 (Nov 23-27)	Thanksgiving Break (No Class)
Week 15 (Nov 30-Dec 4)	Module 13 - Chronobiology <i>Assignments (Canvas): Module 13 Assignment Module 13 Quiz</i>
Week 16 (Dec 7-11)	Final Exam (Modules 7 - 13)