

# ENVIRONMENTAL EXERCISE PHYSIOLOGY

Department of Health & Kinesiology  
The University of Texas at Tyler

## Course Syllabus



**Course:** KINE 5306-060 Topics in Motor Performance

**Class time:** Online (asynchronous)

**Classroom:** Canvas ([www.uttyler.edu/canvas](http://www.uttyler.edu/canvas))

**Instructor:** Scott A. Spier, Ph.D.  
Associate Professor  
Department of Health and Kinesiology

**Office:** Herrington Patriot Center 2186  
Phone: (903) 566-7427  
Email: [sspier@uttyler.edu](mailto:sspier@uttyler.edu) (Please use “KINE 5306” or “EEP” in the subject line)  
*\*Note: Please do NOT use “patriots” in my email address; it won’t be delivered to me.*

**Office hours:** By appointment or via Zoom (call or email to schedule)



## MATERIALS

**Textbook:** There is no required textbook for this course. The textbook Advanced Environmental Exercise Physiology (Human Kinetics, 2010; ISBN: 978-0-7360-7468-1) by Stephen S. Chung is a good resource, but is not required. Any good exercise physiology text, though not required, may also be helpful, particularly if you need a refresher on the basics of exercise physiology.

**Assigned Readings:** Readings from review articles and/or original research papers will be assigned in each module. Some of the assigned readings may be difficult to understand if you do not have the appropriate scientific background. An exercise physiology text should provide the appropriate background for a better understanding of the assigned articles. If not, you will need to consult additional resources.

**Technical requirements:** Minimum technological requirements that must be met in order to complete this course can be found in the **UT Tyler Student Resources** link in the **GETTING STARTED** module in Canvas. If you have technical problems, please refer those to Campus Computing Services (I cannot help you with technical issues).

## COURSE PURPOSE AND DESCRIPTION

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

Although there is no official prerequisite for this course, it is assumed that every student has successfully completed courses in *Anatomy & Physiology* and in *Exercise Physiology* at the undergraduate level. Though not required, ideal preparation for this class would also include other undergraduate science courses such as physics, chemistry, and/or biochemistry.

## GENERAL STUDENT LEARNING OUTCOMES (SLOs)\*

Students who successfully complete this course will be able to:

1. Describe the physiological responses and potential adverse reactions to hot and cold environments and the effect of these environments on exercise performance;
2. Describe the physiological responses and potential adverse reactions to a hyperbaric environment;
3. 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;
4. Describe the physiological adaptations and potential adverse reactions to microgravity and the consequences of these adaptations upon return to Earth;
5. Describe the physiological responses and potential adverse reactions to sleep deprivation and its effects on exercise performance.

\*More specific learning outcomes will be provided in each learning module.

This course addresses these objectives through the following:

1. study of basic facts, concepts and theories of environmental exercise physiology;
2. critically reading and discussing research related to environmental exercise physiology;
3. discussing in writing questions and viewpoints related to environmental exercise physiology, analyzing and supporting viewpoints based on research evidence;
4. applying theoretical concepts in environmental exercise physiology.

## COURSE STRUCTURE AND DELIVERY

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

The content of this course is organized into modules and will be accessed in the **Modules** tab in Canvas. Within each *module*, you will find learning objectives, assigned readings, and recorded lectures and/or videos associated with the reading assignments. Written and/or discussion assignments, quizzes, and exams will also be found in the *Modules* tab. The first module, **Getting Started**, will explain the different Canvas functions you will use in this class.

## INSTRUCTIONAL METHODS

Instructional methods will include lecture, discussion, and evaluation of research articles. Student activities may include, though may not be limited to: (a) required readings; (b) writing assignments on topics and/or research articles related to the course SLOs; (c) participating in small-group and whole-class projects and discussions; and (d) completing quizzes and exams.

## COURSE COMMUNICATION

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

**E-mail communication:** The best method for contacting me is by email ([sspier@uttyler.edu](mailto:sspier@uttyler.edu)). All email correspondence should (1) use your Patriots email account or use the email tool in Canvas (i.e., do not send email from your personal account); (2) include **KINE 5306** or **EEP** in the subject line; and (3) use correct grammar and punctuation. Failure to follow these instructions may delay or prevent a response to the email. I'll make every effort to respond to emails on the same day; however, it may take 1 to 2 business days to respond. Please note that e-mails received on the weekends (late Friday through early Monday) will generally be responded to on the following Monday.

## LIST OF COURSE TOPICS

- Temperature (Heat and Cold)
- Hyperbaric Conditions (Free Diving and SCUBA Diving)
- Hypoxia and Altitude (Moderate & High Altitude, Altitude Training)
- Gravity/Microgravity (G-forces, Spaceflight)
- Other Environmental Considerations (Pollution, Sleep Deprivation)

## COURSE REQUIREMENTS AND EVALUATION

**Exams:** Each major unit will have an exam. Exams are timed and you may not use any resources during the exam. Exams may consist of *multiple choice*, *short answer* (one-word answers), and/or *essay questions* over material assigned in lectures, assigned readings, research articles, and discussions. Although the exams mostly focus on the content covered up to that time, they are cumulative in the sense that understanding of content presented earlier in the semester may be necessary for comprehending content later in the semester.

**Quizzes:** Quizzes will be given periodically to assess your understanding of the course material.

**Discussions:** Due to the online nature of the course, interaction with students and the instructor will occur through online discussions in Canvas. These discussion assignments allow you to demonstrate your comprehension of the course material and your ability to communicate that comprehension through writing. Periodically throughout the semester, you will be required to respond to questions about the reading assignments, lectures, research articles, and/or current topics in environmental exercise physiology. Your responses will be graded on the basis of the quality of your responses.

**Written Assignments:** Students will be required to complete written assignments periodically. Details of these assignments will be provided in Canvas.

**Evaluation:** Points for the above assignments will be allocated as follows:

Exams	50%
Quizzes	10%
Assignments	20%
Discussions	20%

Grading will be based on a modified 10-point scale as detailed below:

A = 89.5 - 100%; B = 79.5 - 89.49%; C = 69.5 - 79.49%; D = 59.5 - 69.49%; F = 59.5% and below

## COURSE POLICIES

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

**Quality of work:** All assignments, including exams, presentations, participation, and projects, will be graded with rigor appropriate for graduate course work. All written assignments should incorporate correct grammar, spelling, and a logical flow of ideas.

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

**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.

**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 (especially if you fail an exam), 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.

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.

## UNIVERSITY POLICIES

(From the *Handbook of Operating Procedures* and the UT Tyler Website)

### **UT TYLER HONOR CODE**

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

### **STUDENT RIGHTS AND RESPONSIBILITIES**

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

### **CAMPUS CARRY**

We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>

### **UT TYLER A TOBACCO-FREE UNIVERSITY**

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors.

Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products.

There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit [www.uttyler.edu/tobacco-free](http://www.uttyler.edu/tobacco-free).

### **GRADE REPLACEMENT/FORGIVENESS**

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.

Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.

The Census Date is the deadline for many forms and enrollment actions that students need to be aware of. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

### **STATE-MANDATED COURSE DROP POLICY**

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).

Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

### **DISABILITY SERVICES**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University of Tyler at Texas offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student application. The **Student Accessibility and Resources** (SAR) office will contact you when your application has been submitted and an appointment with Cynthia Lowery, Assistant Director Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, the SAR office located in the University Center, # 3150 or call 903.566.7079.

### **STUDENT ABSENCE DUE TO RELIGIOUS OBSERVANCE**

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

### **STUDENT ABSENCE FOR UNIVERSITY-SPONSORED EVENTS AND ACTIVITIES**

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

### **SOCIAL SECURITY AND FERPA STATEMENT**

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

### **EMERGENCY EXITS AND EVACUATION**

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

### **STUDENT STANDARDS OF ACADEMIC CONDUCT**

Disciplinary proceedings may be initiated against any student who engages in scholarly dishonesty, including but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or part to another person, taking an examination for another person, any act designed to give an unfair advantage to a student or the attempt to commit such acts.

- i. "Cheating" includes, but is not limited to:
  - a. Copying from another student's test paper;
  - b. using, during a test, materials not authorized by the person giving the test;
  - c. Failure to comply with instructions given by the person administering the test;
  - d. Possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have specifically been prohibited by the person administering the test;
  - e. Using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
  - f. Discussing the contents of an examination with another student who will take the examination;
  - g. Divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
  - h. Substituting for another person, or permitting another person to substitute for oneself to take a course, test, or any course-related assignment;
  - i. Paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, homework solution, or computer program;
  - j. Falsifying research data, laboratory reports, and/or other academic work offered for credit;
  - k. Taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonable should know that an unfair academic advantage would be gained by such conduct; and
  - l. Misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.
- ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.
- iii. "Collusion" includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on academic dishonesty.
- iv. All written work that is submitted will be subject to review by plagiarism software.

### **UT TYLER RESOURCES FOR STUDENTS**

- [UT Tyler Writing Center](http://writingcenter@uttyler.edu) (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- [UT Tyler Tutoring Center](http://tutoring@uttyler.edu) (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)
- The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- [UT Tyler Counseling Center](http://counseling@uttyler.edu) (903.566.7254)

## **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.