

## Current Topics in Exercise Physiology: Environmental Exercise Physiology

KINE 5290.001

Thursday

3:30 PM – 6:20 PM

GAB 114

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**Instructor:** Sarah E. Deemer, PhD, CSCS

[Sarah.Deemer@unt.edu](mailto:Sarah.Deemer@unt.edu)

*Office hours will be available by appointment. Please email me in advance, and I will make sure we get a meeting set up!*

### **Welcome to UNT!!**

As members of the UNT community, we have all made a commitment to be part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation. UNT's full Non-Discrimination Policy can be found in the UNT Policies section of the syllabus.

### **Prerequisites (recommended):**

Basic biology course, anatomy & physiology course, exercise physiology and/or advanced exercise physiology

### **Text:**

Advanced Environmental Exercise Physiology.

Authors: Stephen S. Cheung & Philip N Ainslie

Publisher: Human Kinetics (2022) (*original version published in 2010, either is ok for this class*)

*\*Note: Please email me if you need help with finding the textbook/covering the cost of the textbook*

### **Course Description:**

This course will explore the body's response to environmental stressors such as heat, dehydration, cold exposure, and high-altitude physiology. Further, the effect of circadian rhythm and sex differences in environmental response, as well as considerations for training adaptations within program design will be emphasized.

### **Course Overview:**

Upon successful completion of this course, the student should be able to:

1. Describe the initial physiological responses upon exposure to an environment that a person is not adapted to
2. Describe how the body adapts to repeated exposure to an environment
3. Describe how various environments (*e.g.*, heat, cold, altitude) affect the ability to exercise and work
4. Understand the individual variability in response to stressful environments
5. Describe countermeasures that people can take to minimize the impact of environmental stressors

### **Course Philosophy:**

This is a graduate course, which means this should be a learning experience for everyone involved, including myself! This also means that you are here because *you want to be here*, and therefore I expect you to take pride and ownership in your work. You should come prepared to class and ready to engage, as well as contribute substantially to class discussions and laboratory data collection. Together, let's make this a fun interactive learning experience.

### **Course Expectations:**

1. **Keeping up with course materials:** It is imperative that you stay on task and prepare for each class period in a timely manner. You will be responsible for having read the associated chapter(s) or papers prior to coming to class.
2. **Class Attendance:** Students who attend class tend to earn higher grades. This class will be a combination of lecture and experiential learning and thus attendance is paramount to success.
3. If you have any special learning needs, please inform the instructor immediately.
4. If at any point during the semester you are unhappy with your performance in this class, please contact the instructor immediately.
5. **Academic dishonesty** will not be tolerated (*i.e.*, copying, plagiarism, cheating) and will result in a failing grade for the semester.

### **Evaluation:**

Final grades will be determined based on the total number of points that you accumulate during the semester. Final letter grades will be determined using the grading scale provided below:

<b>Component</b>	<b>% Final Grade</b>
Attendance/Class Participation	25%
Mid-Term Exam	30%
Heat Lab Report	30%
Scientific Communication Assignment	15%
<b>Total</b>	<b>100%</b>

### **Grading Scale**

<b>FINAL GRADE</b>	<b>PERCENTAGE</b>
<b>A</b>	89.51% – 100%
<b>B</b>	79.51% – 89.50%
<b>C</b>	69.51% – 79.50%
<b>D</b>	59.51% – 69.50%
<b>F</b>	< 59.51%

Students will not be allowed to take an incomplete in this course due to poor planning on their part. If you find you do have a legitimate reason for an incomplete, please talk with me as soon as possible to discuss the situation and to identify the documentation that will be required to support your request. Please consult the UNT catalog to review conditions under which an incomplete may be granted.

### **Mid-term Exam (DUE ON OCTOBER 27, 2022):**

During this class you will complete a mid-term exam, which will be cumulative of the material covered through October 13. This test will be given as a take-home exam, and you will be expected to complete this test individually. The mid-term exam will be worth 30% of your grade. Exams are due to me (submitted via Canvas) on October 27 by 3:30 PM. **No late exams will be accepted.**

### **Heat Chamber Laboratory Assignment (DUE ON DECEMBER 15, 2022):**

As a class, we will collect data on a heat-related question that we will develop together. We will have three class days devoted solely to data collection. At the end of the semester, you will submit a summary of the 'research findings' in a manuscript format which will be formatted similar to a submitted journal publication (see guidelines here under manuscript preparation guidelines: <https://journals.physiology.org/author-info.manuscript-formatting-requirements>). These will be uploaded via Canvas.

In short, your submitted report (double-spaced) will include:

- Title Page (1 page)
- Abstract (1 page, ~500 words)
- Introduction (1-1.5 pages)
- Methods (depends, but ~2 pages)
- Results – which will include tables and figures/figure legends within the text (~2-3 pages?)
  - You can embed your tables and figures within the results section, they don't need to be placed at the end of the manuscript
- Discussion (2-3+ pages)
- References (minimum of 5 peer-reviewed sources)

**Your lab report must be turned in on December 15 by 5:00PM. No late reports will be accepted.**

## **Scientific Communication Assignment (DUE BY NOVEMBER 22, 2022):**

An important aspect of being a scientist is science communication. Effective science communication refers to the ability to discuss science in terms that your audience will understand. Scientists can communicate inwardly to colleagues, or outwardly with important stakeholders such as the public, government, industry, educators, or even scientists outside of one's field. Effective communication is central to improving the diversity and inclusion problems inherent in science. Without effective communication, gatekeeping will persist, and barriers will continue to exclude people from understanding science.

For this assignment, you will choose a recently published paper (original research, no review articles or meta-analyses) in the field of environmental exercise physiology. You will then:

1. Write a 500-word blog summary of the article
2. Develop an infographic describing the article that could be disseminated on social media.
3. Write a 280-character "tweet" that highlights the study's important findings/importance to the field

The paper you will review must be approved by me prior to completing this assignment. Examples of blog posts, infographics, and scientific tweets will be provided for you on Canvas. This assignment can be turned in at any time during the semester but ***must be completed before the Thanksgiving break (due by November 22).***

### **Attendance/Class Participation Grading Criteria:**

<b>Points</b>	<b>Quantity of Participation (Attendance)</b>	<b>Quality of Participation</b>
10	Participates on a regular basis	<ul style="list-style-type: none"><li>• High quality and insightful comments</li><li>• Clear evidence of having read the attendant material(s) (each class period)</li></ul>
9	Participates on a regular basis	<ul style="list-style-type: none"><li>• Good quality comments</li><li>• Evidence of having read the attendant material(s) (each class period)</li></ul>
8	Participates occasionally	<ul style="list-style-type: none"><li>• High quality &amp; insightful comments</li><li>• Clear evidence of having read the attendant material(s) (each class period)</li></ul>
7	Participates occasionally	<ul style="list-style-type: none"><li>• Good quality comments</li><li>• Evidence of having read the attendant material(s) (each class period)</li></ul>
6	Rarely participates	<ul style="list-style-type: none"><li>• High quality &amp; insightful comments</li><li>• Evidence of having read the attendant material(s) (each class period)</li></ul>
5	Rarely participates	<ul style="list-style-type: none"><li>• Fair – good quality comments</li></ul>

***Please note!*** There are 13 class periods – so a perfect attendance/participation score = 130 points. Someone who always comes to class but doesn't participate/interact would receive 65 points. If you miss a class period, you will receive 0 attendance/participation points for that day.

## The culture of the classroom:



*We're all in this together. As your instructor, I will strive to:*

- Be prepared
- Give fair exams and grade in a fair and consistent manner
- Be accessible to students outside of class
- Be understanding and helpful when students are uncertain of the material
- Be open to questions
- Convey a sense of priority, i.e., identify important material
- Give ample time to complete assignments and remind students of due dates.
- Respect each student's opinions, priorities, strengths and weaknesses.

*In return, I ask that you as the students to:*

- Communicate in a professional and responsible fashion, informing me and your classmates (if necessary) in the event of absences in a timely fashion.
- Be a cooperative and engaged member of this class
- Constructively participate in all classroom activities
- Arrive on time
- Turn off (not just silence) phones and other devices
- Refrain from activities that disengage you from the class or distract others. This includes using electronic devices for text-messaging, reading, browsing, etc. and chatting with neighbors in a way that distracts others.
- Inform me before class if you need to leave class early or if you need to be prepared for emergency communication.

## Tentative Order of Topics

Date	Topic	Textbook Chapter
9/1	Overview of Environmental Physiology & Fundamentals of Temperature Regulation	1
9/8	Heat Stress, Heat Adaptation, Heat Therapy	2 & 3
9/15	Hydration Strategies for Exercise	4
9/22	Cold Air Exposure & Cold Water Immersion	5 & 6
9/29	Physiological Adjustments to Acute Hypoxia	9
10/6	High-Altitude Physiology	10
10/13	Altitude Training & Performance	11
<b>10/20</b>	<b>No Class – Work on Midterm Exam</b>	
10/27	Guest Speaker – Roxanne Vogel ( <i>tentative</i> )	
<b>10/27</b>	<b>MID-TERM DUE (submitted via Canvas by 3:30PM)</b>	
11/3	Heat Lab Day 1 ( <i>meet in PEB</i> )	
11/10	Heat Lab Day 2 ( <i>meet in PEB</i> )	
11/17	Heat Lab Day 3 ( <i>meet in PEB</i> )	
<b>11/22</b>	<b>SPECIAL NOTE: Scientific Communication Assignment due by 5:00PM</b>	
<b>11/24</b>	<b> No Class – Happy Thanksgiving! </b>	
12/1	Individual Variability: Sex and Age	16
12/8	Chronobiology (Circadian Rhythm)	15
<b>12/15</b>	<b>Final Exam Day – lab report due by 5:00PM (submitted via Canvas by 5:00PM)</b>	

**Note:** The following information is designed to help the class run smoothly. **The instructor reserves the right to make additions and adjustments as necessary.** Some of the writings, lectures, films, or presentations in this course may include material that conflicts with the core beliefs of some students. Please review the syllabus carefully to see if the course is one that you are committed to taking. If you have a concern, please discuss it with me at your earliest convenience.

## **Technical Support**

Student Helpdesk:

UIT Helpdesk  
Sage Hall 130  
940-565-2324  
helpdesk@unt.edu

## **Minimum Technology Requirements**

Minimum technology requirements include:

- Computer
- Reliable internet access
- Speakers
- Microphone
- Plug-ins
- **Microsoft Office Suite**
  - All assignments will be submitted as a Microsoft Word document. Microsoft Office 365 is provided free to you from the university and instructions for installation can be found here: <https://it.unt.edu/installoffice365>. Assignments submitted/uploaded as a document other than Word will not be graded and receive a grade of 0. Please let me know if you have questions about this policy.
- Canvas Technical Requirements (<https://clear.unt.edu/supported-technologies/canvas/requirements>)

## **Computer Skills & Digital Literacy**

Course-specific technical skills learners must have to succeed in the course include:

- Using Canvas
- Using email with attachments
- Downloading and installing software
- Using spreadsheet programs
- Using presentation and graphics programs

## **Technical Assistance**

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk: UIT Student Help Desk site (<http://www.unt.edu/helpdesk/index.htm>)

Email: helpdesk@unt.edu

Phone: 940-565-2324

In Person: Sage Hall, Room 130

Walk-In Availability: 8am-9pm

Telephone Availability:

- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help (<https://community.canvaslms.com/docs/DOC-10554-4212710328>)

# UNT Policies

## **Academic Integrity Policy**

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

## **ADA Policy**

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (<https://disability.unt.edu/>).

## **Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)**

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

## **Emergency Notification & Procedures**

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

## **Retention of Student Records**

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

## **Acceptable Student Behavior**

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's Code of Student Conduct (<https://deanofstudents.unt.edu/conduct>) to learn more.

## **Access to Information - Eagle Connect**

Students' access point for business and academic services at UNT is located at: [my.unt.edu](http://my.unt.edu). All official communication from the University will be delivered to a student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail Eagle Connect (<https://it.unt.edu/eagleconnect>).

### **Student Evaluation Administration Dates**

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (<http://spot.unt.edu/>) or email [spot@unt.edu](mailto:spot@unt.edu).

### **Sexual Assault Prevention**

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at [SurvivorAdvocate@unt.edu](mailto:SurvivorAdvocate@unt.edu) or by calling the Dean of Students Office at 940-565- 2648.

Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at [oeo@unt.edu](mailto:oeo@unt.edu) or at (940) 565 2759.

### **Student Verification**

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses (<https://policy.unt.edu/policy/07-002>).

### **Use of Student Work**

A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student's permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student's written permission.

# Academic Support & Student Services

## Mental Health

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- Student Health and Wellness Center (<https://studentaffairs.unt.edu/student-health-and-wellness-center>)
- Counseling and Testing Services (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- UNT Care Team (<https://studentaffairs.unt.edu/care>)
- UNT Psychiatric Services (<https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>)
- Individual Counseling (<https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling>)

## Chosen Names

A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- UNT Records
- UNT ID Card
- UNT Email Address
- Legal Name

\*UNT eUIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.

## Pronouns

Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don't assume someone's name, we should also ask and not assume someone's pronouns.

You can add your pronouns to your Canvas account so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- What are pronouns and why are they important?
- How do I use pronouns?
- How do I share my pronouns?
- How do I ask for another person's pronouns?
- How do I correct myself or others when the wrong pronoun is used?

## Additional Student Support Services

- Registrar (<https://registrar.unt.edu/registration>)
- Financial Aid (<https://financialaid.unt.edu/>)
- Student Legal Services (<https://studentaffairs.unt.edu/student-legal-services>)
- Career Center (<https://studentaffairs.unt.edu/career-center>)
- Multicultural Center (<https://edo.unt.edu/multicultural-center>)
- Counseling and Testing Services (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- Pride Alliance (<https://edo.unt.edu/pridealliance>)
- UNT Food Pantry (<https://deanofstudents.unt.edu/resources/food-pantry>)

## Academic Support Services

- Academic Resource Center (<https://clear.unt.edu/canvas/student-resources>)
- Academic Success Center (<https://success.unt.edu/asc>)
- UNT Libraries (<https://library.unt.edu/>)
- Writing Lab (<http://writingcenter.unt.edu/>)