
KINE 433-504
PHYSIOLOGY OF EXERCISE
DEPARTMENT OF KINESIOLOGY & SPORT MANAGEMENT

Spring 2023, TR 8:00-9:15 am, ALLN 1006

Instructor:	Aaron B. Morton, Ph.D. <i>Assistant Professor, KNSM</i> Office: Gilchrist 314 Office Phone: 979-862-1181 amorton@tamu.edu (preferred) Office Hours: Open door policy (or by appointment)
Teaching Assistant:	Jacob Kendra, M.S. <i>Doctoral Student, KNSM</i> jkendra@tamu.edu
Prerequisites:	Junior or senior classification; admission to the professional phase of program <u>or</u> approval of instructor for non-kinesiology majors. BIOL 319, BIOL 320 (or equivalent)
Textbook:	Kenney WL, Wilmore JH and DL Costill. <i>Physiology of Sport and Exercise</i> . 8 th Edition, Champaign: Human Kinetics, 2022. <i>Available from Barnes and Noble Bookstore</i>

Course Description

This course provides an introduction to the physiology of exercise. It builds on the student's knowledge of human anatomy and physiology, and describes the acute effects of exercise and the influence of chronic exercise training on the various functional systems in different populations and under different environmental conditions. In addition, the importance of exercise to health and wellness will be considered from a physiological perspective.

Learning Outcomes

By the end of the course, the student will be able to:

1. Describe the perturbations to homeostasis that occur in energy utilization, neuromuscular function, cardio-respiratory function, and other systems during acute exercise.
2. Describe the adaptations that occur in the various systems during exercise training.
3. Describe the differences in acute and chronic responses to exercise in different populations including the elderly.
4. Describe the influences of different environmental factors in the exercise response.
5. Describe the physiological bases for the health benefits of exercise.

Evaluation Each student's grade will be based on the following:

Examination I	100 points
Examination II	100 points
Examination III	100 points
Final Exam	100 points (OPTIONAL)

Note: Midterm examinations will be held during the regularly scheduled class meeting. The final exam will be held during the scheduled final examination period. The final exam will be CUMULATIVE covering material from Sessions 1-28.

Grading

Grades will be assigned according to the total points obtained:

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

The grades will normally not be adjusted, (i.e. the letter grade will be based on the percentage of available points achieved during the semester). If you choose to take the final exam, your total available points will be 400. If you opt out of the final exam, your total available points will be 300. Extra credit will not be given.

Attendance:

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments. Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Students are required to attend class for scheduled examinations. It is the student's responsibility to decide whether or not to attend lectures; however, it should be recognized that the instructor will not provide any lecture materials outside of class.

Study Suggestions:

Students should expect KINE 433 to be a challenging class. Therefore, students are strongly encouraged to attend ALL lectures. In addition, students are advised to utilize the following strategy for mastering the material:

1. Do the assigned reading before class.
2. Devote a minimum of 2 h after each class to study the material covered in lecture.
3. If material is still unclear, ask your peers for insight and/or come to office hours.

Tentative Class Schedule

<u>Session</u>	<u>Date</u>	<u>Topic</u>	<u>Readings</u>
<u>SECTION I: Muscle and Bioenergetics</u>			
	Jan 17	Introduction	Chap 0
1	Jan 19	Skeletal Muscle	Chap 1
2	Jan 24	Bioenergetics and Metabolism I	Chap 2
3	Jan 26	Bioenergetics and Metabolism II	Chap 2
4	Jan 31	Neural Control	Chap 3
5	Feb 2	Hormonal Control	Chap 4
6	Feb 7	Energy Expenditure and Fatigue	Chap 5
7	Feb 9	Adaptations to Resistance Training	Chap 11
8.	Feb 14	Catch Up/ Review	
9.	Feb 16	Examination I (Sessions 1-9)	
<u>SECTION II: Cardio-Respiratory Physiology</u>			
10.	Feb 21	Cardiovascular I	Chap 7
11.	Feb 23	Cardiovascular II	Chap 9
12	Feb 28	Cardiovascular III	Chap 9
13	Mar 2	Respiratory I	Chap 9
14	Mar 7	Respiratory II	Chap 8
15.	Mar 9	Cardio-respiratory adaptations to training	Chap 9
	Mar 13-17	SPRING BREAK	
16.	Mar 21	Cardio-respiratory adaptations to training	Chap 12
17	Mar 23	Catch Up/Review	
18	Mar 28	Examination II (Sessions 11-18)	

SECTION III: Integrative Physiology

19	Mar 30	Thermoregulation I	Chap 14
20	April 4	Thermoregulation II	Chap 14
21	April 6	Exercise at Altitude	Chap 15
22	April 11	Obesity/Body Composition I	Chap 17
23	April 13	Obesity/Body Composition II	Chap 17
24	April 18	Diabetes	Chap 17
25	April 20	Cardiovascular Disease OUT OF CLASS	Chap 22
26	April 25	Examination III (Sessions 20-25)	
27	April 27	Redefined Day (Tuesday Classes)/Catch Up/Review	
28.	May 2	Final Examination (OPTIONAL) (8:00-9:15am; Sessions 1-28)	

American Disabilities Act (ADA) Policy:

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Academic Integrity Statement and Policy:

“An Aggie does not lie, cheat or steal, or tolerate those who do.”

“Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case” (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Title IX and Statement on Limits to Confidentiality:

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University’s goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS). Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University’s Title IX webpage.

Statement on Mental Health and Wellness:

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

To help protect Aggieland and stop the spread of COVID-19, Texas A&M University urges students to be vaccinated and to wear masks in classrooms and all other academic facilities on campus, including labs. Doing so exemplifies the Aggie Core Values of respect, leadership, integrity, and selfless service by putting community concerns above individual preferences. COVID-19 vaccines and masking — regardless of vaccination status — have been shown to be safe and effective at reducing spread to others, infection, hospitalization, and death.

Copyright Statement:

The handouts used in this course are copyrighted. "Handouts" include all materials generated for this class, which include but are not limited to syllabi, quizzes, examinations, laboratory 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 permission is expressly granted.

Cell Phones:

Please silence all cell phones prior to the beginning of class.
Please do not text during class.