

KINE 5320: Advanced Exercise Physiology
Fall 2015

Instructor: R. Matthew Brothers, PhD

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Office Hours: Open Door Policy / Schedule an Appointment

Section Information: KINE 5320-001

Time and Place of Class Meetings: PEB 202 (Physical Education Building) Mon 2:00-4:50

Description of Course Content / Course Objectives: The goal of this course is to provide students information regarding the integrative physiological response to exercise. We will discuss the mechanisms of control in healthy individuals and how these mechanisms are impaired in various scenarios as well as in “at risk” and diseased populations. The student will also gain experience in the process of critically understanding and digesting various issues related to the control of physiological systems during exercise. Lastly, the student will gain experience in presenting research topics to an audience.

Student Learning Outcomes: Students will be expected to know the following:

- 1) Systems Physiology (pulmonary, skeletal muscle, cardiac and cellular, metabolism)
- 2) An understanding of the limitations to performance
- 3) The impact of different environments upon performance
- 4) The effect of various disease conditions on physiological mechanisms involved in exercise

Required Textbook and Other Course Materials: Class Text (required): Powers & Howley. Exercise Physiology: Theory and Application to Fitness and Performance 8th Edition (2012)

Miscellaneous (Peer Reviewed Manuscripts / Review Articles, etc.): Will be posted in the “course material folder” on the Blackboard web site for this course.

Course Policies:

- Attend all classes and arrive on time. We will start promptly at 2:00 PM
- Turn off beepers, pagers, cellular phones, or other communication devices. If you can't for legitimate reasons, set them to vibration mode.
- Computers are to be used only for class related activities.
- Exams and assignment due dates are firm. Arrangements MUST be made ahead of time in the event of scheduling issues.
- Read all assignments ahead of time and come to class prepared to contribute to scholastic dialogue.
- Please feel free to make any suggestions you feel would improve the learning experience for yourself and others whenever the need arises during the semester.

Descriptions of major assignments and examinations:

- Class Participation (group discussions, written questions / comments during student presentations, etc...): A critical component to this course is the scholarly interaction amongst all involved (students and teacher). Therefore you will be expected to come to class having read all of the materials and prepared to engage in open dialogue about the “topic of the day”.
- Exams: You will be given 3 exams throughout the semester. The first two will be about the course related content that we go over during the lectures. The third exam will be over the presentation topics (see below for more information). The exams will be comprised of a variety of types of questions; i.e. multiple choice, fill in the blank, short answer, interpreting / drawing graphs etc...
- Presentation: During the last few weeks of the semester each student will give a formal PPT presentation over a research paper. In addition to the presenter it is expected that the non-presenting students have read the paper and are prepared to actively engage in scholarly dialogue during the “question and answer” section of the presentation.

General Guidelines for Student Presentations (Presenter):

- These are designed to be formal presentations of an original peer reviewed research article to the class. It is expected that this is treated as if you were presenting at a research conference.
- Each presentation will be 20 minutes in length (strictly enforced) and should contain 10 minutes of a power point presentation followed by 10 minutes group questions / discussion of the work.
- All articles must be published in a scientific journal of reasonably high impact. The article should be generally related to the content of the course and must be selected by the student and approved by Dr. Brothers prior to the presentation.
- Papers must be submitted to your class mates a minimum of one week prior to your presentation.

General Guidelines for Student Presentations (Non-Presenters / Audience):

- All students are expected to critically read all papers prior to the presentation and to ask questions / provide commentary during the 10 min discussion period.
- Each student must come to class with a minimum of three questions and / or comments for each of the articles to be presented that day. These questions must be typed up and must be turned in to Dr. Brothers each day.

Attendance: As the instructor of this section, I will not formally be taking attendance and will therefore allow students to attend class at their own discretion. However, attendance is highly recommended not only for the intellectual growth of the student but also because a component of your grade (see below) will be determined by your class participation and thus, any unexcused absence will result in a 0 for participation for that day.

Grading / Course Evaluation:

- Class Participation (group discussions, performance on quizzes, written questions / comments during student presentations, etc...): 20%
- Exam #1: 25%
- Exam #2: 25%
- Presentation: 20%
- Exam #3: 10%

Make-up Exams: Exams can only be made-up if approved by the instructor prior original exam date.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog, <http://catalog.uta.edu/academicregulations/grades/#graduatetext>

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD)**. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364.
Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101,

§2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located through the main exit, to the right and outside. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Tentative Lecture Schedule

<u>Date</u>	<u>Lecture Topic</u>	<u>Readings*</u>
8/31	Control of internal environment Bioenergetics	Ch 2 Ch 3
9/7	<u>No Class – Labor Day</u>	
9/14	Anaerobic/aerobic metabolism Skeletal muscle contraction Skeletal; muscle fiber type	Ch 3 Ch 8 Ch 8
9/21	Exercise metabolism	Ch 4
9/28	Cardiovascular / Respiratory Responses	Ch 9/10
10/5	Temperature Regulation / Environment	Ch 12 / 24
10/12	<u>Exam #1</u>	
10/19	Special populations	Ch 21, 22
10/26	Ergogenic aids	Ch 25
11/2	Factors limiting performance	Ch 19
11/9	Health benefits of exercise	Ch 14
11/16	<u>Exam #2</u>	
11/23	Student Presentations	
11/30	Student Presentations	
12/7	<u>Exam #3</u>	

* Be sure to check blackboard regularly for any additional readings