

APPLIED EXERCISE PHYSIOLOGY
KINE 4300
Fall 2010

Instructor: Judy R. Wilson, Ph.D.
MAC 229
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Schedule: MWF 1:00 - 2:50 pm, lecture (MAC 213) and laboratory (MAC Rm150)

Office: MW F 11:00 am -12:00 noon or by appointment

Credit: 3 Semester Credit Hours

Textbook: Wilmore, JH, DL Costill, and L. Kenney. *Physiology of Sport and Exercise* 4th Ed. Human Kinetics, 2008
Laboratory Manual - needed material will be posted prior to lab sessions

Supplemental

American College of Sports Medicine. Guidelines for Exercise Testing and Prescription, 5th Ed. Baltimore: William & Wilkins, 1995.

Additional Resources in Central Library

Brooks, George A. *Exercise Physiology: human bioenergetics and its applications*, 1984

Brooks, George A. *Fundamentals of Human Performance*, 1987

Guyton, Arthur. *Textbook of Medical Physiology*, 1991

Rowell, Loring. *Human Circulation: regulation during physical stress*, 1986

Research Assistance-Library

Helen Hough is the Kinesiology Library liaison. Should you need help researching your topic, contact Ms. Hough at 2-7429 or by email: <hough@.uta.edu>.

Prerequisites: Current CPR Certification and CITI training for research with human subjects <http://www.uta.edu/ra/oric/training/cititraining.htm>. Exercise Physiology (KINE 3315), Fitness Assessment and Programming (KINE 4315), Data Acquisition (KINE 3325) or permission of instructor.

Course Objectives: A primary objective of this course is to further your understanding of exercise physiology. A second but equally important objective is to enhance your ability for critical thinking of exercise physiology through the scientific process. This includes formation of a research question, hypothesis, designing an experiment, and inferring conclusions from the data you have collected. Secondary objectives include improving technology skills to assist collecting and analyzing data, and writing and oral communication skills for demonstrating understanding of the physiological principles.

EXCET Competencies addressed:

Competency 002 - Fitness and fitness development/maintenance.

Competency 004 - Fitness-related health, nutrition, and safety.

Competency 009 - Learner assessment.

Lecture Topics:

Part I

Body Composition (14)

Cardiorespiratory Exercise Physiology (5, 6, 7)

Adaptations to Aerobic training (10)

Part II

Exercising Muscle (1, 3, 4, 8, 10)

Anaerobic training

Part III

Exercise in Hot and Cold Environments (11)

Exercise at Altitude (12)

Microgravity

Laboratory Experiences (See instructions below for lab write ups):

1. Body Composition – anthropometry and hydrostatic weighing
2. Cardiorespiratory adjustments to maximal exercise
3. Cardiorespiratory adjustments to submaximal exercise
4. Anaerobic threshold
5. Skeletal muscle responses to exercise

Laboratory experiences in this class will be conducted during the class time as scheduled, not necessarily on Friday. Labs may take several class periods to complete. Each lab will be approached as a small group research project. The data collected by each group will be combined for data analysis and may be reported in abstract form.

Research Project

Experimental Design Data Based Research Project, including a poster and oral presentation, as well as, submission of manuscript for The University of Texas at Arlington Department of Kinesiology Journal of Applied Exercise Physiology.

Site Visits

Site visits to a variety of facilities will be scheduled throughout the semester; attendance is mandatory (5 of 6). These experiences are designed to assist the student in evaluating career opportunities and in the development of contacts for future employment and mentorship within the exercise science and wellness community. **Professional attire, business casual (no jeans, warm-ups, shorts or caps or food or drink).**

Student Evaluation:

	% Overall Grade
1. Written Examinations	
Exam 1 Cardiorespiratory	10%
Exam 2 Skeletal Muscle	10%
Exam 3 Heat and Altitude	10%
Final Exam (Comprehensive)	20%

2. Laboratory Experiences	
Laboratory Write-Ups, Quizzes	10%
Class Quizzes	5%
Site Visit Attendance (5 of 6)	5%
TACSM	
Anderson Lecture	
3. Research Project	
Poster Presentation	10%
Oral Presentations	10%
Manuscript (Due at final exam time)	10%

<u>% of Total Points</u>	<u>Grade</u>
90 - 100%	A
80 - 89.9	B
70 - 79.9	C
60 - 69.9	D
<60	F

Attendance Policy: Attendance is required for successful completion of this course. Examples of excused absences are pre-approved university activities, illness and emergencies which can be documented. Appropriate documentation must be presented in order to make up examinations and other assignments missed for excused absences. Assignments and examinations will be scheduled for the first day after the excused absence. The student is responsible for all site visits, material, laboratory or lecture, presented in class during his/her absence. If a student has more than 3 absences, their grade will not receive the benefit of a curve, if it is used.

Laboratory write ups are due one week following the lab. If you are absent from lab or if your assignment is late, you will receive 50% of your score.

Students are NOT to change signup times for labs without permission of the instructor. Written materials must follow appropriate punctuation, sentence structure, spelling, noun-verb agreement and other rules for correct writing format. Failure to follow such rules will result in a reduction of total points based on the number of mistakes.

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. (Sept. 1, 2010) 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. (Nov 5, 2010) 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. Contact the Financial Aid Office for more information.

Americans with Disabilities Act: The University of Texas at 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)*. 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 that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. 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.

Academic Integrity: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

Student Support Services Available: The University of Texas at 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. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Electronic Communication Policy: The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. ***Students are responsible for checking their MavMail regularly.*** Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>. There is no additional charge to students for using this account, and it remains active even after they graduate.

Lab Safety Policy: Students registered for this course must complete the University's required "Lab Safety Training" prior to entering the lab and undertaking any activities. Students will be notified via MavMail when their online training is available. Once notified, students should complete the required module(s) as soon as possible, but no later than their first lab meeting. **Until all required Lab Safety Training is completed, a student will not be given access to lab facilities, will not be able to participate in any lab activities, and will earn a grade of zero for any uncompleted work.**

Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., through next August) for all courses that include a lab. If a student enrolls in a lab course in a subsequent academic year, he/she must complete the required training again.

To access your training, you must use your UT Arlington NetID and password. It is recommended that you complete the training using either Internet Explorer or Firefox. Technical questions about the training website should be directed to the University Compliance Services training helpline, 817-272-5100, or to compliance@uta.edu. General questions about scope and content of the Lab Safety Training should be directed to the Office of Environmental Health and Safety, 817-272-2185, or to ehsafety@uta.edu.

The University of Texas at Arlington College of Education

Mission, Core Values and Professional Dispositions

MISSION: To develop and deliver an educational program that ensures the highest teacher, administrator and allied health science preparation and performance and

To be a recognized contributor in the field of educational and allied health science research and practice through effective teaching, quality research and meaningful service.

The Educator and Administrator Preparation units' collaboratively developed shared vision is based on these **CORE VALUES**, dispositions and commitments to:

- Excellence
- Learner-centered environment
- Research-based
- Collaboration
- Diversity
- Technology
- Field Experiences
- Life-long Learning

Each candidate in the Educator and Administrator Unit of the College of Education of UT-Arlington will be evaluated on **PROFESSIONAL DISPOSITIONS** by faculty and staff. These dispositions have been identified as essential for a highly-qualified educator. Instructors and program directors will work with candidates rated as "unacceptable" in one or more stated criteria. The candidate will have an opportunity to develop a plan to remediate any deficiencies.

Demonstrates excellence

- Meets stated expectations of student performance.
- Keeps timelines. Arrives on time for class and other activities.
- Produces significant artifacts of practitioner evidence.
- Possesses a willingness to set goals.
- Attends all classes/trainings and practicum experiences.
- Completes activities as assigned.
- Has appropriate personal appearance and/or hygiene for professional setting.

Participates in a learner centered environment and shows respect for self and others

- Uses appropriate and professional language and conduct.
- Supports a "high quality" learning environment.
- Shows respect and consideration for the thoughts and feelings of others.

Research-based pedagogy

- Has an awareness of and willingness to accept research-based concepts.
- Identifies important trends in education.
- Demonstrates interests in learning new ideas and strategies.
- Relates class discussions and issues to current events in education.

Participates in on-going collaboration with peers and professionals

- Demonstrates kindness, fairness, patience, dignity and respect in working with peers, staff and instructors.
- Works effectively with others.
- Assists others in the university classroom or practicum setting.
- Demonstrates an openness to assistance from others.
- Receives feedback in a positive manner and makes necessary adjustment.

Exhibits stewardship of diversity

- Shows appropriate stewardship and tolerance to diverse people, environments, and situations.

Advocates use of technology

- Uses and applies existing technologies sufficiently in work.
- Shows a willingness to use and apply emerging technologies in work.

Shows interest in the learner and the learning-process

- Demonstrates significant learning improvement over time.
- Shows interest in the learning process and demonstrates the necessary amount of time, energy, and enthusiasm for becoming better learners, teachers, and practitioners.