

APPLIED EXERCISE PHYSIOLOGY
KINE 4300
Fall, 2009

Instructor: Judy R. Wilson, Ph.D.
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Schedule: MWF 1:00 - 2:50 pm, lecture (PEB 202A) and laboratory (ESRL Rm151)
Office: MW F 11:00 am -12:00 noon **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 4316), 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, 10)

Aerobic training

Part II

Skeletal Muscle Structure, Function and Exercise response (1, 3, 4,8,10)

Anaerobic training

Part III

Exercise in Hot and Cold Environments (10)

Exercise at Altitude (11)

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. Labs will be scheduled at various times throughout the semester and may take several class periods to complete. Each lab will be approached as a small group research project. Prior to a scheduled lab we will discuss a research question and then design a study within the parameters of the variables to be collected. The data collected by each group will be combined for data analysis and reporting 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 (4 of 5). 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:

1. Written Examinations	% Overall Grade
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 (4 of 5)	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

If a student has more than 3 absences, their grade will not receive the benefit of a curve, if it is used.

Laboratory writeups 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.

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.

Departmental Drop Policy:

1. It is the responsibility of the student to drop or add classes or withdraw from school within the appropriate time frame established by the University Registrar. Deadlines can be found in the semester Schedule of Classes.
 2. The department will not warn students of excessive absences.
 3. The department will not automatically drop students for excessive absences.
- Please consult me if you are considering the possibility of dropping this course. Help is available if you consult with the instructor.

The University of Texas System Academic Dishonesty Policy:

"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." (Regent's Rules and Regulations, Part One, Chapter, VI, Section 3, Subsection 3.2, Subdivision 3.22)

American Disabilities Act: If you require an accommodation based on disability, I would like to meet with you in the privacy of my office the first week of the semester to be sure you are appropriately accommodated.

Changes in Course Content/Format:

As the instructor for this course, I reserve the right to make changes to the content or syllabus as I deem necessary and appropriate.

“The University of Texas @ Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. They include learning assistance, developmental education, advising and mentoring, admission and transition, and socially should contact the Office of Student Success Programs at 817.272.6107 for more information and appropriate referrals.”

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.