

Department of Kinesiology
KINE 5500 & 6500
Exercise Technology I
Spring 2012

Instructor: Jim McDonald
Office: 2092 – TigerFit Lab
2129 – Muscle Physiology Lab
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COURSE DESCRIPTION

This course has been designed to introduce and develop knowledge, skills, and abilities that are necessary to function as an exercise professional in fitness and clinical exercise settings. Exercise Technology I prepares students to perform health and fitness assessments following procedures specified by the **American College of Sports Medicine (ACSM)**. The skills and procedures are applicable to the **ACSM Personal Training** and **Health/Fitness Specialist (HFS) certification**. The course will also provide information and hands on experience which may also assist in preparation for certifications from the **National Strength and Conditioning Association** or the **American Council on Exercise**.

The class will address the principles of common physical assessments used in clinical and fitness settings, the selection of appropriate assessments, results interpretation and the application of assessment results for exercise prescription and chronic disease risk reduction. Laboratory experiences are designed to develop competencies in physical assessments. Laboratory experiences will include health screening and risk of physical exertion, body composition, musculoskeletal fitness, pulmonary function, cardiovascular function, and exercise tests for functional capacity and cardiovascular fitness.

COURSE OBJECTIVES

After this course, you will be able to:

1. Explain and discuss the underlying principles and rationale for health and fitness screening, blood profile analysis, measurements of heart rate and rhythm, blood pressure, graded exercise testing, body composition, and musculoskeletal fitness.
2. Using pre-test screening instruments for determining the appropriateness of exercise, exercise testing, and cardiovascular disease perform risk stratification
3. Use direct and indirect techniques to assess muscular strength, flexibility, and endurance
4. Assess body density and estimate body composition using skin fold methods, bioelectrical impedance and anthropometrical techniques
5. Measure systolic and diastolic blood pressures at rest and during exposure to various environmental stressors using a stethoscope and sphygmomanometer

6. Conduct sub-maximal graded exercise tests for the purpose of examining cardiovascular responses to exercise and determining exercise capacity
7. Demonstrate proficiency using regression equations, nomograms and metabolic calculations to determine body composition, estimates of cardiovascular capacity, exercise energy expenditure and exercise workloads.
8. Demonstrate the ability to prepare a subject for a 10-lead electrocardiogram. Interpret normal ECG at rest and during a graded exercise test.

COURSE REQUIREMENTS

General Expectations: You are expected to access the course website on **Blackboard** on a regular basis in order to obtain assignments and assigned readings. You are expected to read the assigned chapters, class handouts and laboratory instructions **PRIOR** to the lab experiences. In addition, you are expected to keep up with assignment postings on this syllabus, due-dates and your assignment grades.

Attendance: It is important that you attend each class session and are punctual. Your attendance in this class is mandatory. If you have to miss class for any reason, you should inform the instructor 24 hours in advance, if possible. If the absence is a documented excused absence it will not count against your grade. Excused absences are defined in the Tiger Cub Student Handbook. Unexcused absences will result in a twenty five point (-25 pts), ¼ letter grade, deduction in your course point total. Six unexcused absences will result in an FA in the class. **Exams and laboratory experiences will not be repeated! (The exception to this policy is if you have a documented excused absence.)**

Participation: You are expected to come to class prepared to participate in lab experiences. This means wearing appropriate attire (e.g., shorts, t-shirt and jogging shoes, swim-wear and a towel for body composition analysis) and bringing a calculator and the appropriate laboratory handouts to every class.

Accommodations: Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).

Honesty Code: Students are expected to do their own work and cheating will not be tolerated. Please see University policies at <https://sites.auburn.edu/admin/universitypolicies/default.aspx>

5500/6500 TEXTBOOKS

Advanced Fitness Assessment and Exercise Prescription, Vivian Heyward, Human Kinetics, 6th Edition, 2010, ISBN 978-0-7360-8659-2

Practical ECG for Exercise Science and Sports Medicine, G. Whyte and S. Sharma, Human Kinetics, 2010, ISBN 978-0-7360-8194-8

ACSM's Health-Related Physical Fitness Assessment Manual, Lippincott, Williams & Wilkins, 3rd Edition, 2007, ISBN 0-7817-7549-6

Supplemental Textbooks:

ACSM's Guidelines for Exercise Testing and Prescription. Lippincott, Williams & Wilkins, 8th Edition, 2009, ISBN 0-7817-6903-7

COURSE SCHEDULE

The course schedule and the reading assignments can be found on Blackboard. Additionally, test and quizzes are on the schedule but they are subject to change. You are expected to complete the readings assignments prior to class.

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EVALUATION

You may earn up to 550 total points in this course. Your individual evaluation will be based on the total points you earn throughout the course. For example, an "A" = 495 total points earned or 90%, a "B" = 440 - 494 points earned or 80 - 89%, a "C" = 385 - 439 points earned or 70 - 79%.

Exams (300 Points)

There will be a total of 3 exams throughout the semester; each exam is worth 100 points. Exams are designed to test your knowledge in areas covered in assigned text readings, lectures and laboratory experiences. Make-up exams will only be given for students with documented excused absences. Students with excused absences must be prepared to take the exam on the day they return to class. Excused absences are defined in the TIGER CUB STUDENT HANDBOOK.

Quizzes (100 Points)

There will be 5 quizzes given over the semester; each quiz is worth 20 points. The quizzes are designed to test your knowledge on assigned readings and classroom discussion. Make-up quizzes will be given for students with documented excused absences.

Final Exam (150 Points)

The comprehensive final exam, worth 150 pts, will be administered at the scheduled exam time at the end of the semester.

Graduate Student Project

Graduate students will turn in a project approved by the instructor prior to the Thanksgiving Break. The nature and design of the project will be mutually agreed upon by the graduate student and the instructor. The basic outline and goal of the projects will be discussed during the first few weeks of class.