

**DEPARTMENT OF Kinesiology**  
**KINE 5550 & 6550**  
**EXERCISE TECHNOLOGY II**  
**SPRING 2011**

**Instructor: Jim McDonald**

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## **COURSE DESCRIPTION**

This course continues to develop the knowledge, skills and abilities (KSAs) for exercise testing and prescription that were introduced in Exercise Technology I (KINE 5500/6500). Course topics will address special considerations for pre-exercise health evaluations, fitness testing techniques and procedures, data collection, and data interpretation in healthy and clinical populations. Course material will prepare students to pass the *ACSM certification examination for Health/Fitness Specialist* and to attain entry-level jobs in clinical exercise settings and the health & fitness industry. In addition, students in Exercise Technology II will refine their KSA competencies by conducting health & fitness assessments as part of the **TigerFit Program**. *The TigerFit Program* has been developed to serve our community by providing comprehensive health & fitness assessments for Auburn University faculty and staff, alumni, members of local running and cycling clubs, and citizens in the surrounding communities.

## **COURSE OBJECTIVES**

**After this course, students will be able to:**

1. Demonstrate the ability to identify contraindications for exercise testing and participation, stratify individuals based on their cardiovascular disease risk and select appropriate assessment strategies from pre-exercise health appraisal instruments
2. Demonstrate the ability to measure and interpret heart rate, blood pressure, ECGs, RPE, at rest and during exercise
3. Demonstrate the ability to conduct a graded exercise test, including knowing when to appropriately terminate the test and monitor an active cool down.
4. Demonstrate the ability to assess and interpret measures of pulmonary function, cardiovascular fitness, body composition and musculoskeletal fitness in healthy and clinical adult populations
5. Explain how major classes of cardiovascular and metabolic drugs influence heart rate and blood pressure responses to exercise
6. Identify abnormal ECGs, particularly common dysrhythmias and conduction disturbances
7. Develop individualized exercise prescriptions from health and fitness assessment results

8. Discuss results and exercise prescription recommendations with clients undergoing health and fitness assessments in the **TigerFit Program**
9. Demonstrate an understanding of program administration fundamentals, including: 1) a basic knowledge of the health & fitness industry; 2) how to develop, measure, and assess program outcomes, and; 3) how to develop, maintain and evaluate program quality

## **COURSE REQUIREMENTS**

### **Preparation:**

You are expected to keep up with all of the assigned readings and course notes in order to be prepared to discuss class topics and practice skills. You must provide a copy of your current CPR certification card by **31 January** in order to participate in the **TigerFit Program**. You are also be expected to complete various on line courses concerning laboratory safety form the University Risk Management and Safety Office. The courses required will be specified during the first week of class

### **Presentation:**

You are expected to come to class appropriately dressed for the daily assignment. This means wearing appropriate attire for review and practice (e.g., shorts, t-shirt - ladies wear or bring a sport bra, jogging shoes) and bringing a calculator, texts, and the appropriate data collection forms to every class.

You are expected to wear khaki slacks, a casual dress shirt (with collar) and shoes for each of the scheduled health & fitness assessments. In the case that inappropriate attire is worn on a **TigerFit** testing date, you will be asked to leave and return only after you change into appropriate attire.

### **Attendance:**

It is critical that you attend each class session and are punctual. Your attendance in this class is mandatory. During the first few weeks of this course you will be developing and practicing the skills you will need to competently perform the health & fitness assessments in the **TigerFit Program**. During the last several weeks of the semester, your presence in each class is required because you will be responsible for collecting data in some aspect of the assessment process (e.g., serving as a client's host, conducting GXTs, measuring body composition, strength, endurance & flexibility, etc). Everyone involved with these assessments is counting on you to do your job. If you have to miss class for any reason, you are required to inform me at least 24 hours in advance. If the absence is due to an emergency, I expect you to inform me as soon as 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. Twenty five points (-25 pts), ¼ letter grade, will be deducted from your course point total for an unexcused absence from class – unless it is a scheduled **TigerFit** date. Fifty points (-50 pts), ½ of a letter grade, will be deducted from your course point total for an unexcused absence from a **TigerFit** session. Four unexcused absences will result in an FA for the class.

### **Accommodations:**

Students who need accommodations are asked to arrange a meeting with me during my 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 alternative time can be arranged. To set up this meeting, please contact me by e-mail. Bring a copy of your *Accommodation Memo* and an *Instructor Verification Form* to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with the Program for Students with Disabilities at 1244 Haley Center, 844-2096.

## TEXTBOOKS

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

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

**Advanced Fitness Assessment and Exercise Prescription**, Vivian Heyward, Human Kinetics, 6<sup>th</sup> 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

### Supplemental Textbook:

**ACSM's Certification Review**, Lippincott, Williams & Wilkins, 3<sup>rd</sup> Edition, 2009, ISBN 0-7817-6901-3

**ACSM's Resource Manual for Guidelines for Exercise Testing & Prescription**. Lippincott, Williams & Wilkins, 6<sup>th</sup> Edition 2009, ISBN 0-7817-6906-8

## EVALUATION

### Overview:

Your course grade will be determined from the total number of points you earn relative to the 1000 total points available to earn in the course. An "A" means you demonstrated excellence in your knowledge of the material covered in class, professionalism, teamwork, and competencies. In order to receive an "A", you must earn  $\geq 90\%$  of the total points available in the course. A grade of "B" means you are above average in your knowledge of the material covered in class, professionalism, teamwork, and competencies. In order to receive a "B", you must earn between 80 - 89% of the total points available in the course. In order to receive a "C", you must earn between 70 - 79% of the total points available in the course. A grade of "C" means you demonstrated the minimum required knowledge, skills and competencies needed to function as an exercise professional in a clinical, corporate or commercial setting. A grade of "D" indicates that you are not yet ready to function competently as an exercise professional. Additional descriptions for grades in this course are found below:

***Your knowledge, skills and abilities will be evaluated by written and practical examinations. You will be evaluated on your contributions to the development of a procedures manual that is used as a resource for our TigerFit assessments. You will be evaluated on your professionalism, competency, and teamwork while conducting health & fitness assessments as part of the TigerFit Program. These evaluations are described in more detail below.***

## **Quizzes - 400 points:**

Your knowledge, skills and abilities (KSAs), as listed for the **ACSM Health/Fitness Specialist**, will be assessed using written and practical examinations and quizzes. There will be 8 quizzes worth 50 points each and will cover KSAs for HFS certification. The quizzes will be multiple choice and reflect the questions found in ACSM's Certification Review.

## **Final Exam - 100 points**

The final exam will be a comprehensive examination cover all the KSAs required for HFS certification. The exam will be given at the prescribed date and time for the final exam in the course. You may earn to the final exam by scoring 80% or better the previous exams and quizzes and passing the ACSM HFS certification examination. Proof of passing the prior to the last day of class no less than a "B" grade for the course by participating in all **TigerFit** assessment dates and passing the ACSM Health & Fitness Specialist (HFS) examination and providing proof of your passing the exam prior to the last day of class. Please see Mr. McDonald to receive an *ACSM University Endorsed Program Discount Code* if you are planning to take the HFS exam. You will need this code when you register for the exam in order to receive a 50% discount on the cost of the exam. Please visit [www.pearsonvue.com/acsm](http://www.pearsonvue.com/acsm) or call 1-888-883-2276 to schedule a time to take the ACSM certification exam. The exam is only available via computer-based testing at Pearson VUE testing sites. You will be given the full 200 points for the final exam is you passed the ACSM HFS exam.

## **TigerFit Lab Performance – 500 points:**

**TigerFit** testing dates are scheduled on 10 weeks throughout the fall semester. Each weekly evaluation will be worth 50 points. You will be evaluated both during the **TigerFit** sessions and on how well you prepare the **TigerFit** report. You will be evaluated using a standardized evaluation form posted on *Blackboard*. You should recognize that the grading for each of these areas is somewhat subjective. Therefore, you will have the opportunity to review and discuss your current weekly evaluation form during the week following each evaluation. Weekly evaluation scores will be counted towards your overall course grade one week after the evaluation date (immediately after you have been able to review and discuss your scores with the instructor). Areas that will be evaluated are:

### **Professionalism:**

You are expected to be punctual, come to class prepared, dress appropriately and interact professionally with the **TigerFit** clients. Your ability to explain testing procedures (e.g., explaining why the test is being performed, instructions for completing the tests, what you expect from the client, what they can expect from you during the test, importance of their test results and how they will be used in exercise prescription) will be evaluated. In addition, you should work with clients in a friendly, appropriate and courteous manner. This includes greeting clients and helping clients with any questions or concerns they might have.

### **Competency (Health & Fitness Assessment Data Collection):**

It is imperative that you accurately record all client data necessary for optimizing client safety and determining their health and fitness status. The data you record will be used to generate individualized reports and develop exercise prescriptions. Therefore, your ability to operate the equipment and instrumentation, record data accurately, clearly and in the proper format will be evaluated after each test date.

### **Teamwork (Your ability to work with your peers):**

You will be evaluated on their ability to work with their peers. Special attention will be given to your ability to work with classmates assigned to or working at the same testing station. This includes preparing the station for client assessment, collecting and recording client data and station clean-up.

## **Data Management (Your ability to accurately record and interpret data):**

You will be responsible for accurately recording and interpreting client results during report generation. You will be graded on their ability to manage data, calculate and record health estimates from physiologic measurements (e.g., pulmonary function results, skin fold, hydrostatic weighing results, musculoskeletal assessment scores, cardiovascular responses to exercise, blood sample reports) and accurately record the results on client report forms.

## **Exercise Tech II Course Schedule**

**Spring 2011**

### **January**

Week 1	13	Introduction & Forms Review
Week 2	18	Pulmonary Function, Blood Pressure and Heart Rate
	20	Body Composition
Week 3	25	GXT & ECG
	27	Muscular Strength & Endurance

### **February**

Week 4	1	Flexibility & Balance
	3	Musculoskeletal Review – Chad Abrams
Week 5	8	TigerFit Health and Fitness Clinic
	10	Report Preparation
Week 6	15	TigerFit Health and Fitness Clinic
	17	Quiz and Report Preparation
Week 7	22	TigerFit Health and Fitness Clinic
	24	Quiz and Report Preparation

### **March**

Week 8	1	TigerFit Health and Fitness Clinic
	3	Quiz and Report Preparation
Week 9	8	TigerFit Health and Fitness Clinic
	10	Quiz and Report Preparation
Week 10	15	Spring Break
	17	Spring Break
Week 11	22	TigerFit Health and Fitness Clinic
	24	Data Reduction & Interpretation
Week 12	29	TigerFit Health and Fitness Clinic
	31	Quiz and Report Preparation

### **April**

Week 13	5	TigerFit Health and Fitness Clinic
	7	Quiz and Report Preparation
Week 14	12	TigerFit Health and Fitness Clinic
	14	Quiz and Report Preparation
Week 15	19	TigerFit Health and Fitness Clinic
	21	Quiz and Report Preparation
Week 15	26	Last Day of Class