

Department of Kinesiology
KINE 5500 & 6500
Exercise Technology I
Summer 2011

Instructor: Jim McDonald

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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. Estimate 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 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.

Honesty Code: The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to cheating will apply to this class.

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

Supplemental Textbooks:

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

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

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

EVALUATION

You may earn up to 500 total points in this course. Your individual evaluation will be based on the total points you earn throughout the course. For example, an "A" = 450 total points earned or 90%, a "B" = 400 - 449 points earned or 80 - 89%, a "C" = 350 - 399 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 (100 Points)

The comprehensive final exam, worth 100 pts, will be administered at the scheduled exam time at the end of the semester.

COURSE OUTLINE & ASSIGNED READINGS

Exercise Tech I Course Schedule

Summer 2011

		Topic	Reading Ass
	May		
Week 2	23	No class	Chapter 1, Heyward (VH)
	25	No class	Chapter 3, VH
Week 3	30	Memorial Day	Chapter 2, VH
	June		
Week 3	1	Physical Activity & health (quiz)	Chap 1 & 3, VH
Week 4	6	Risk Assessment	Chap 2, VH
	8	Body Composition testing (quiz)	Chap 8 & Appendix D, VH
Week 5	13	Weight Management	Chap 9, VH
	15	Pulmonary Testing	Pulmonary, Blackboard (BB)
	17	Exam 1	
Week 6	20	Cardiorespiratory Fitness & Testing	Chap 4, VH
	22	Aerobic prescription (quiz)	Chap 5, VH
Week 7	27	Muscular Fitness & Testing	Chap 6, VH
	29	Exam 2	
	July		
Week 8	4	Holiday	
	6	Muscular Exercise Prescription	Chap 7, VH
Week 9	11	Flexibility and Balance (quiz)	Chap 10 & 12, VH
	13	Stretching	Chap 11 & App F, VH
	15	Exam 3	
Week 10	18	Ex Prescription – other populations	Ex Prescription, BB
	20	Electrocardiograph (quiz)	Chap 3, Whyte & Sharma
Week 11	25	Electrocardiograph	Chap 4 & 5, W&S
	27	Course Review	
	August		
Week 12	2	Final	