

**KIN 411    Fall, 2007**  
**Laboratory Experiences in Exercise Physiology (2 Credits)**

<b>Time</b>	<b>Lecture:</b>	Monday	12:40 p.m. - 1:30 p.m. (IM Circle 137)
	<b>Labs:</b>	Tuesday	(1) 12:40 p.m. - 3:30 p.m. (all lab sections in IM Circle 026A) (6) 4:10 p.m. - 7:00 p.m.
		Wednesday	(2) 8:00 a.m.- 10:50 a.m. (3) 12:40 p.m. - 3:30 p.m.
		Thursday	(4) 8:00 a.m.- 10:50 a.m. (5) 12:40 p.m. - 3:30 p.m.

**Instructors**      Jeremy Knous (sections 1,3; [knousjer@msu.edu](mailto:knousjer@msu.edu)), Erin Kuffel (sections 2,4; [kuffeler@msu.edu](mailto:kuffeler@msu.edu)),  
Lanay Mudd (sections 5,6; [muddlana@msu.edu](mailto:muddlana@msu.edu))

**Textbooks**

**Required:**            ACSM's Guidelines for Exercise Testing and Prescription (7<sup>th</sup>ed.)  
Coursepack (Budget Printing, 974 Trowbridge Rd)

**Course Description**

Laboratory techniques for testing and evaluating individuals for aerobic fitness, muscular strength, and endurance, body composition and other physiologic responses to exercise. Exercise program development for personal health fitness.

**Course Objectives**

Students will be able to demonstrate knowledge of appropriate techniques and skills involved with exercise testing, evaluation, and prescription.

**Course Prerequisites**

Students must either have completed, or currently be enrolled in KIN 310 (Physiological Bases of Physical Activity). It is assumed that students will also have completed all chemistry, anatomy, and physiology requirements.

**Evaluation**

Attendance and Participation	15%
Quizzes /Homework	45%
Practical Exam	20%
Written Exam	20%

NOTE: It is expected that students will attend all lecture/lab sessions, take all quizzes/exams at the regular time, and turn in assignments when they are due. Occasionally there are extenuating circumstances that may require a student to miss a class session (Some may even be legitimate). It is the student's responsibility to inform the instructor **PRIOR TO** the missed class. If prior notice is not given, there will be no makeup sessions.

**ACADEMIC DISHONESTY POLICY**

Any student discovered receiving assistance from or giving assistance to another student on an exam or quiz or homework, or cheating in any way on any exam or quiz or homework in this class will be given a final grade of **Q\_0** for the class. Any such incident will also be reported to the Department and to the College and will go on file in the student's academic record.

## KIN 411 Class Schedule Fall 2007

Date (Week of)	Topics	Readings
August 27	Lecture - Introduction, terminology, calculations Lab - Lab tour, equipment, calibration, ergometry	ACSM: Ch. 1, App. F
September 3	<b>No Lecture (Labor Day Holiday)</b> Lab - EE assessment, metabolic equations	ACSM: App D H/F: Ch. 7
September 10	Lecture - Blood Pressure, cardiovascular control Lab - Blood pressure, rest, cycle, treadmill, heart rate	ACSM: Ch 3
September 17	Lecture - Lung Volumes Lab - Pulmonary function, height/weight, BodPod	ACSM: Ch. 3
September 24	Lecture - Submaximal exercise testing Lab - Submaximal cycle and treadmill tests	ACSM: Ch. 4,6
October 1	Lecture - Anthropometry, body composition Lab - Skinfolds, bioelectrical impedance analysis (BIA)	ACSM: Ch. 4 H/F: Ch. 9
October 8	Lecture - Economy/efficiency Lab - Submaximal field tests, economy/efficiency	H/F: Ch. 7
October 15	Lecture - Electrocardiography (EKG) Lab - EKG, rest and exercise	ACSM: Ch 6, App C
October 22	Lecture - Graded exercise test (GXT) Lab - Aerobic capacity tests	ACSM: Ch. 2,3,5,6
October 29	Lecture - Graded exercise test (GXT) Lab - Aerobic capacity tests	ACSM: Ch. 2,3,5,6
November 5	Lecture - Anaerobic capacity Lab - Wingate, vertical jump, lactate threshold	
November 12	Lecture - Other components of fitness Lab - Muscular strength and endurance and flexibility	ACSM: Ch. 4,6
November 19	Lecture - Exercise prescription Lab - Exercise prescription, practice	ACSM: Ch. 2,3,7
November 26	Lecture - Questions, review Lab - Practice, practical finals	
December 3	Practical Final (no lecture) Individually scheduled (bring subject)	
December 13 (Thursday)	Written Final Exam	12:45-2:45 p.m. <b>NO EXCEPTIONS!!</b>

In addition to these assigned readings, homework, and quizzes, you will be given a series of assignments (entitled "scientific writing") designed to help you with your major lab report that is due 2 weeks after you complete a graded exercise test in March. Specific dates/details for the "scientific writing" sections will be given in class.

**CAATE Competencies and proficiencies covered in this class:**

NU-CP1 Demonstrate the ability to counsel a patient in proper nutrition. This may include providing basic nutritional information and/or an exercise and nutrition program for weight gain or weight loss. The student will demonstrate the ability to take measurements and figure calculations for a weight control plan (e.g., measurement of body composition and BMI, calculation of energy expenditure, caloric intake, and BMR). Armed with basic nutritional data, the student will demonstrate the ability to develop and implement a preparticipation meal and an appropriate exercise and nutritional plan for an active individual. The student will develop an active listening relationship to effectively communicate with the patient and, as appropriate, refer the patient to other medical professionals (physician, nutritionist, counselor or psychologist) as needed.

RM-C11 Explain the importance and use of standard tests, test equipment, and testing protocol for the measurement of cardiovascular and respiratory fitness, body composition, posture, flexibility, muscular strength, power, and endurance

RM-C13 Identify and explain the various types of flexibility, strength training, and cardiovascular conditioning programs. This should include the expected effects (the body's anatomical and physiological adaptation), safety precautions, hazards, and contraindications of each.

RM-P1 Instruct the patient how to properly perform fitness tests to assess his or her physical status and readiness for physical activity. Interpret the results of these tests according to requirements established by appropriate governing agencies and/or a physician. These tests should assess:

RM-P1.1 Flexibility

RM-P1.2 Strength

RM-P1.3 Power

RM-P1.4 Muscular Endurance

RM-P1.5 Agility

RM-P1.6 Cardiovascular Endurance

RM-P1.7 Speed

RM-P2 Develop a fitness program appropriate to the patient's needs and selected activity or activities that meet the requirements established by the appropriate governing agency and/or physician for enhancing:

RM-P2.1 Flexibility

RM-P2.2 Strength

RM-P2.3 Power

RM-P2.4 Muscular Endurance

RM-P2.6 Agility

RM-P2.6 Cardiovascular Endurance

RM-P2.7 Speed

RM-CP1 Plan, implement, evaluate, and modify a fitness program specific to the physical status of the patient. This will include instructing the patient in proper performance of the activities and the warning signs and symptoms of potential injury that may be sustained. Effective lines of communication shall be established to elicit and convey information about the patient's status and the prescribed program. While maintaining patient confidentiality, all aspects of the fitness program shall be documented using standardized record-keeping methods.

MC-C8 Explain the importance and proper use of a peak flowmeter or similar device in the evaluation and management of respiratory conditions.

MC-P4 Apply commonly used special tests and instruments (e.g., otoscope, stethoscope, ophthalmoscope, peak flowmeter, chemical "dipsticks" [or similar devices]) and document the results for the assessment of:

RM-P3 Instruct a patient regarding fitness exercises and the use of weight training equipment to include correction or modification of inappropriate, unsafe, or dangerous lifting techniques.

RM-C19 Explain the basic principles and concepts of home, school, and workplace ergonomics and their relationship to the prevention of illness and injury.

PA-C6 Describe the body's responses to physical exercise during common diseases, illnesses, and the injury.