

Eastern Illinois University – Department of Kinesiology and Sports Studies

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Syllabus

**KSS 5270 – Regulation of Metabolism and Body Composition**

Spring 2012

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Instructor: Jake Emmett, Ph.D.

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Office Hours: M, W, F 9:00-10:00, 11:00-12; T, R 10:00-11:00 or by appointment

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**Course Description:**

This course is designed to provide an in depth study of exercise metabolism during acute and chronic exercise and its influence on body compositional changes.

**Objectives:**

1. Understand how energy is derived for exercise, with emphasis on aerobic and anaerobic cellular metabolism.
2. Demonstrate the direct and indirect measurement of energy expenditure during rest and physical activity.
3. Design an experiment to explore how metabolism is affected by the intensity and duration of the exercise.
4. Prepare a written report and give an oral presentation of the findings of the experiment.
5. Be able to explain how exercise metabolism is affected by diet before, during and following the activity.
6. Demonstrate laboratory and field assessment of individual energy capacities (aerobic and anaerobic power).
7. Design a training protocol to enhance aerobic power; design a training protocol to enhance anaerobic power.
8. Demonstrate laboratory and field techniques to assess body composition.
9. Be able to explain various definitions/assessments of obesity.
10. Discuss the role of obesity in health.
11. Explain the relationship of energy balance and weight control, and explain the role of physical activity in weight control.
12. Understand the effect of various types of physical activity on body composition.
13. Design a weight loss program that incorporates physical activity. (Goal: effective critical thinking and problem solving)

**Course Content:**

1. Carbohydrate, fat and protein as potential energy sources.
2. Metabolic support from vitamins and minerals,
3. The energy value of food.
4. Transfer of energy in the body at rest and during exercise
5. Measurement of energy expenditure at rest and during exercise
6. Metabolic adaptations to chronic exercise training.

**Text:** *Exercise Physiology* by McArdle, Katch and Katch, 7<sup>th</sup> Ed.

**Assessments:**

1. Assignments (5-10 points)
2. Quizzes (10 points)
3. Discussion (10 points).
4. Exams (25 points).
5. Review paper (50 points).

**Grading:**

- A  $\leq$  90% of total points
- B 80-89% of total points
- C 70-79% of total points
- D 60-69% of total points
- F < 60% of total points

**General Class Information:**

- Success in this class requires regular and consistent study and review of the material covered in the textbook and in class discussions. It is expected that students come to class prepared to contribute to the class discussion. No extra credit is offered in this class.
- WebCT is incorporated in this class in the following ways; access to Power Point presentations, online exams, online assignments, grade book, etc. If you have any questions regarding the use of WebCT, please ask the instructor.
- If you have a documented disability and wish to receive academic accommodations, please contact the Coordinator of the Office of Disability Services (581-6583) as soon as possible.
- Students who are having difficulty achieving their academic goals are encouraged to contact the Student Success Center ([www.eiu.edu/~success](http://www.eiu.edu/~success)) for assistance with time management, test taking, note taking, avoiding procrastination, setting goals, and other skills to support academic achievement. The Student

Success Center provides individualized consultations. To make an appointment, call [217-581-6696](tel:217-581-6696), or go to 9<sup>th</sup> Street Hall, Room 1302.