CGS Agenda Item: 09-30
Effective: Summer 2011

Eastern Illinois University

NEW/REVISED COURSE PROPOSAL FORMAT

(Approved by CAA on 4/13/06 and CGS on 4/18/06)

This format is to be used for all courses submitted to the Council on Academic Affairs and/or the Council on Graduate Studies. (See http://www.eiu.edu/~eiucaa/Directions.pdf for directions on completing this form.)

Please check one: ☒ New course ☐ Revised course

PART I: CATALOG DESCRIPTION

1. **Course prefix and number:** KSS 5280
2. **Title (may not exceed 30 characters, including spaces):** Exercise Metabolism Body Comp
3. **Long title, if any (may not exceed 100 characters, including spaces):** Regulation of Exercise Metabolism and Body Composition
4. **Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]:** 3-0-3
5. **Term(s) to be offered:** ☐ Fall ☐ Spring ☒ Summer ☐ On demand
6. **Initial term of offering:** ☐ Fall ☐ Spring ☒ Summer **Year:** 2011
7. **Course description (not to exceed four lines):** Study of the regulation and the assessment of energy use/metabolism during and following exercise, including the influence of diet and training on exercise metabolism. Also included are assessment of body composition and obesity, the affect of exercise on body composition, and the role of exercise in weight regulation.
8. **Registration restrictions:**

   a. **Identify any equivalent courses**. None
   b. **Prerequisite(s)**. BIO 2001, Human Physiology and KSS 4340, Exercise Physiology
   c. **Who can waive the prerequisite(s)?**

      ☐ No one ☒ Chair ☐ Instructor ☐ Advisor ☐ Other (Please specify)

   d. **Co-requisites** (course(s) which MUST be taken concurrently with this one): None

   e. **Repeat status:** ☒ Course may not be repeated.

      ☐ Course may be repeated to a maximum of hours or times.

   f. **Degree, college, major(s), level, or class** to which registration in the course is restricted, if any: None
   g. **Degree, college, major(s), level, or class** to be excluded from the course, if any: None
9. **Special course attributes** [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive] None
10. **Grading methods** (check all that apply): ☒ Standard letter ☐ C/NC ☐ Audit ☐ ABC/NC ("Standard letter"—i.e., ABCDF--is assumed to be the default grading method unless the course description indicates otherwise.)
11. **Instructional delivery method:** ☒ lecture ☐ lab ☐ lecture/lab combined ☐ independent study/research ☐ internship ☐ performance ☐ practicum or clinical ☐ study abroad ☐ other

PART II: ASSURANCE OF STUDENT LEARNING

1. **List the student learning objectives of this course:**
   Students will:
   a. Understand how energy is derived for exercise, with emphasis on aerobic and anaerobic cellular metabolism. (Goal: depth of content knowledge)
   b. Demonstrate the direct and indirect measurement of energy expenditure during rest and physical activity. (Goal: depth of content knowledge)
   c. Design an experiment to explore how metabolism is affected by the intensity and duration of the exercise. (Goal: advanced scholarship through research of creative activity)
   d. Prepare a written report and give an oral presentation of the findings of the experiment. (Goal: effective oral and written communication)
   e. Be able to explain how exercise metabolism is affected by diet before, during and following the activity. (Goal: depth of content knowledge)
   f. Demonstrate laboratory and field assessment of individual energy capacities (aerobic and anaerobic power). (Goal: depth of content knowledge)
   g. Design a training protocol to enhance aerobic power; design a training protocol to enhance anaerobic power. (Goal: effective critical thinking and problem solving)
   h. Demonstrate laboratory and field techniques to assess body composition. (Goal: depth of content knowledge)
   i. Be able to explain various definitions/assessments of obesity. (Goal: effective critical thinking and problem solving)
   j. Discuss the role of obesity in health. (Goal: depth of content knowledge)
   k. Explain the relationship of energy balance and weight control, and explain the role of physical activity in weight control. (Goal: depth of content knowledge)
   l. Understand the effect of various types of physical activity on body composition. (Goal: depth of content knowledge)
   m. Design a weight loss program that incorporates physical activity. (Goal: effective critical thinking and problem solving)

2. **Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:**

Objective	Exams	Papers	Oral Presentation	Research Project	Applied Activities
Understand how energy is derived for exercise, with emphasis on aerobic and anaerobic cellular metabolism.	x				
Demonstrate the direct and indirect measurement of energy expenditure during rest and physical activity.					x
Design an experiment to explore how metabolism is affected by the intensity and duration of the exercise.				x	

Prepare a written report and give an oral presentation of the findings of the experiment.		x	x		
Be able to explain how exercise metabolism is affected by diet before, during and following the activity.	X	x			
Demonstrate laboratory and field assessment of individual energy capacities (aerobic and anaerobic power).	X				x
Design a training protocol to enhance aerobic power; design a training protocol to enhance anaerobic power.		x			x
Demonstrate laboratory and field techniques to assess body composition.	X				x
Be able to explain various definitions/assessments of obesity.	X				
Discuss the role of obesity in health.	X				
Explain the relationship of energy balance and weight control, and explain the role of physical activity in weight control.	X				
Understand the effect of various types of physical activity on body composition.	X				
Design a weight loss program that incorporates physical activity.		x			x

3. Explain how the instructor will determine students' grades for the course:

Exams	30%
Applied Activities	20%
Research Project	15%
Summary Papers	20%
Final Exam	15%

4. Not technology delivered.

5. Graduate credit only.

6. No writing designation.

PART III: OUTLINE OF THE COURSE

Week 1. Aerobic and anaerobic energy systems
Week 2. Energy use during exercise
Week 3 Assessment of energy use at rest and during exercise
Week 4. Research projects: Effect of intensity and duration on exercise metabolism
Week 5. Research projects cont.;
Week 6. Effect of diet on energy regulation during exercise
Week 7. Metabolic adjustments during recovery from exercise;
Effect of diet on metabolic recovery from exercise
Week 8. Assessment of aerobic and anaerobic capacities of individuals
Population differences in energy capacities (children, women, older adults, various athletic populations)
Week 9 Training to enhance aerobic energy capacity
Week 10 Training to enhance anaerobic energy capacity
Week 11 Body composition models
Assessment of body composition
Week 12 Assessment of body composition cont.
Week 13 Definitions and assessments of obesity
Obesity and health
Week 14 Energy balance & weight control
Week 15 Effects of physical activity on body composition & weight control

PART IV: PURPOSE AND NEED

1. **Explain the department's rationale for developing and proposing the course.**
Currently, our graduate program offers one class in general exercise physiology which is insufficient to prepare our students for professional certification and to meet future accreditation standards. It is common among graduate programs for the topic of exercise physiology to be delivered through multiple courses allowing for greater depth and the broader coverage more typical of a graduate level course.

2. **Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.**
We propose that this course be graduate level with a prerequisite of KSS 4340, Exercise Physiology, due to the depth and breadth of the information beyond what is covered in KSS 4340.

3. **If the course is similar to an existing course or courses, justify its development and offering.**
This course is only similar to KSS 5230 which will be removed from the KSS graduate curriculum.

4. **Impact on Program(s):**

This course will be required as part of both the Clinical and Fitness options within the Graduate Exercise Science concentration.

PART V: IMPLEMENTATION

1. **Faculty member(s) to whom the course may be assigned:** Dr. Croisant, Dr. Emmett, Dr. Pritschet

2. **Additional costs to students:** None

3. **Text and supplementary materials to be used (Include publication dates):** *Exercise Physiology: Energy, Nutrition & Human Performance* (6th ed.). McArdle, Katch & Katch. Lippincott, Williams Wilkins (2007).

PART VI: COMMUNITY COLLEGE TRANSFER

N/A

PART VII: APPROVALS

Date approved by the department or school: October 23, 2008

Date approved by the college curriculum committee: October 26, 2009

Date approved by the Honors Council *(if this is an honors course):*

Date approved by CAA: **CGS:**