CGS Agenda Item: 09-31
Effective: Spring 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 5270
2. **Title (may not exceed 30 characters, including spaces):** Neuromus Exercise Physiol
3. **Long title, if any (may not exceed 100 characters, including spaces):** Neuromuscular Exercise Physiology
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):** This course examines the affects of acute and chronic exercise, including various types of strength and conditioning programs, on the function of the neuromuscular system in various populations (e.g. health, women, elderly, disease, etc.)
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:

a. Develop an understanding of neuromuscular function during acute exercise with an in depth analysis of neuromuscular function at the cellular level, including but not be limited to, action potentials and the sliding filament theory. (Goal: depth of content knowledge)
b. Develop an understanding of the factors that contribute to muscle fatigue and muscle soreness from exercise. (Goal: depth of content knowledge)
c. Understand the factors the contribute to acute muscle force production. (Goal: effective critical thinking and problem solving)
d. Understand how neuromuscular function influences resistance training principles. (Goal: effective critical thinking and problem solving)
e. Identify the various adaptations to the neuromuscular that result from chronic resistance training. (Goal: depth of content knowledge)
f. Develop an understanding of how resistance training principles vary for women, older adults, and other populations. (Goal: effective critical thinking and problem solving)
g. Identify how certain neurological and muscular diseases can be modified or influence through a neuromuscular training program. (Goal: effective critical thinking and problem solving)
h. Understand how neuromuscular factors contribute to flexibility and range of motion of the joints. (Goal: depth of content knowledge)
i. Design and experiment assessing factors that influence muscular force production and/or power output.

2. Assignments/Activities:

Objective	Exam	Summary Paper	Quiz	Research Project
Neuromuscular Function	x		x	
Muscle Fatigue and Soreness	x		x	
Acute Force Production	x		x	x
Training Principles	x	x		x
Adaptations	x	x		
Populations	x	x		x
Diseases	x	x		

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

Midterm Exam	25%
Summary Papers (4)	20%
Quizzes (3)	15%
Research Project	15%
Final Exam	25%

4. Not technology delivered.

5. **For graduate credit only.**

6. **This course has no writing designation.**

PART III: OUTLINE OF THE COURSE

Week 1. Neurological function (1a)
Week 2. Neurological function: integrative control (1a)
Week 3. Skeletal muscular function: sliding filament theory (1a)
Week 4. Skeletal muscular fiber types and architecture (1a)
Week 5. Muscle contractile properties (1a)
Week 6. Acute muscular force production (1c)
Week 7. Muscle fatigue and soreness (1b)
Week 8. Myoplasticity (1e)
Week 9-10. Neuromuscular strength training principles (1d)
Week 11-12. Neuromuscular adaptations to chronic training (1d)
Week 13. Neuromuscular flexibility (1h)
Week 14. Neuromuscular training in women and older adults (1f)
Week 15. Exercise and neuromuscular diseases (1g)

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 the certifications 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 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 the Fitness option within the Exercise Science concentration and as an elective in the Clinical option.

PART V: IMPLEMENTATION

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

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

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

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:**