

Eastern Illinois University – Department of Kinesiology and Sports Studies

Syllabus

KSS 5270 – Neuromuscular Exercise Physiology

Fall 2012

Instructor: Jake Emmett, Ph.D.

Office: 2202 Lantz Building

Email: WebCT mail (primary), jemmett@eiu.edu (secondary)

Phone: 581-7113

Office Hours: Office Hours: 10-11:00 Mon & Wed, 9-10:00 Tue, & Thu., or by appointment.

Course Description:

This course is designed to provide an in depth study of neuromuscular system function and application to acute and chronic exercise.

Objectives:

1. 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.
2. Develop an understanding of the factors that contribute to muscle fatigue and muscle soreness from exercise.
3. Understand the factors the contribute to acute muscle force production.
4. Understand how neuromuscular function influences resistance training principles.
5. Identify the various adaptations to the neuromuscular that result from chronic resistance training.
6. Develop an understanding of how resistance training principles vary for women, older adults, and other populations.
7. Identify how certain neurological and muscular diseases can be modified or influence through a neuromuscular training program.
8. Understand how neuromuscular factors contribute to flexibility and range of motion of the joints.

Course Content:

1. Neuormuscular structure and function.
2. Muscle fibers, motor units and motoneurons (Chapter 1).
3. Motor unit recruitment (Chapter 2)
4. Muscle blood flow (Chapter 3)
5. Muscular Fatigue (Chapters 4 and 5)
6. Neuromuscular mechanisms in Aerobic-Endurance Training (Chapter 6 and 7)
7. Muscle molecular mechanisms in Strength Training (Chapter 8)
8. Neuromuscular mechanisms in Strength Training (Chapter 9 and 10)

Text: *Advanced Neuromuscular Exercise Physiology*, Gardinar (2011).

Evaluation:

- 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

Assessments:

Presentations (20 points).

Exams (50 points).

Review paper (50 points).

Quizzes (10 points)

- 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) 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 9th Street Hall, Room 1302.