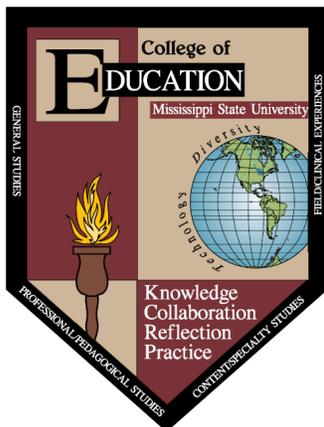


**Mississippi State University
College of Education**

**Department of Kinesiology
Course Syllabus**

Course Prefix & Number:	EP 8443
Course Title:	Neuromuscular Mechanisms in Exercise
Credit Hours:	Three (3) semester hours
Type of Course:	Lecture
Catalog Description:	Overview of the neural process associated with movement with the major focus being the adaptation of the human muscular system to exercise.

College of Education Conceptual Framework:



The faculty in the College of Education at Mississippi State University are committed to assuring the success of students and graduates by providing superior learning opportunities that are continually improved as society, schools, and technology change. The organizing theme for the conceptual framework for the College of Education at Mississippi State University is educational professionals - dedicated to continual improvement of all students' educational experiences. The beliefs that guide program development are as follows:

1. **KNOWLEDGE** - Educational professionals must have a deep understanding of the organizing concepts, processes, and attitudes that comprise their chosen disciplinary knowledge base, the pedagogical knowledge base, and the pedagogical content knowledge base. They must also know how to complement these knowledge bases with the appropriate use of technology.
2. **COLLABORATION** - Educational professionals must continually seek opportunities to work together, learn from one another, forge partnerships, and assume positions of responsibility.
3. **REFLECTION** - Educational professionals must be willing to assess their own strengths and weaknesses through reflection. They must also possess the skills, behaviors, and attitudes necessary to learn, change, and grow as life-long learners.
4. **PRACTICE** - Educational professionals must have a rich repertoire of research-based strategies for instruction, assessment, and the use of technologies. They must be able to focus that array of skills on promoting authentic learning by all students or clients, while exhibiting an appreciation and commitment to the value and role of diversity.

Course Objectives:

1. To gain a better understanding of the central and peripheral nervous systems.
2. To gain a better understanding of adaptation of the central and peripheral nervous system to exercise.
3. To gain a better understanding of adaptation of muscle to exercise.
4. To create an understanding of how to apply this information.

Topics to Be Covered:

- I. Muscle Fibers, Motor Units, and Motorneurons (8 hours)
- II. Motor Unit Recruitment During Different Types of Movements (7 hours)
- III. Muscle Blood Flow and Metabolism (8 hours)
- IV. Peripheral Factors in Neuromuscular Fatigue (8 hours)
- V. Central Factors in Neuromuscular Fatigue (7 hours)
- VI. Muscular Mechanisms in Aerobic Endurance Training (hours)

Textbook:

Gardiner, P. (2011). *Advanced Neuromuscular Exercise Physiology*, 2nd Edition. Human Kinetics.

Methods of Instruction:

1. Lecture (Objectives 1-4)
2. Class Discussion (Objectives 1-4)

Suggested Student Activities:

1. Attend all lectures and participate in classroom discussions (Objectives 1-4)
2. Read appropriate chapters in the textbook and supplementary reading materials (Objectives 1-4)

MSU Honor Code:

Honesty and integrity are expected of every student. Any occurrences of academic misconduct will be dealt with in accordance with university guidelines and procedures. These guidelines and procedures can be accessed on the web at: <http://www.msstate.edu/dept/audit/1207A.html>. Mississippi State University has an approved Honor code that applies to all students. The code is as follows:

“As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do.”

Technology:

Students will be exposed to current uses of technology relevant to course topics and material.

Diversity: Not an aspect of this course.

Disabilities Statement:

Students with disabilities are encouraged to discuss their needs with the instructor, preferably, during the first week of the semester. All reasonable accommodations will be made to see that disabilities do not restrict the student’s opportunity to learn. Help is also available from Student Support Services (<http://www.ss.msae.edu/disabilities/>, Etheridge Hall, 323-3335).

Field Component: This course does not contain a field component.

Evaluation of Student Process:

Exams: There will be four exams in this class. Each of the exams will be valued at 100 points. The exam format will be discussion.

Grading Scale: 100% to 90% = A, 360 - 400 points
89% to 80% = B, 320 - 359 points
79% to 70% = C, 280 - 319 points
60% to 69% = D, 240 - 318 points
59% and > = F, less than 240 points

Bibliography:

Guyton, A. (2000). Textbook of Medical Physiology (10th edition). Saunders, Philadelphia, PA.

Kandel, E. (2011). Principles of Neural Science (5th edition). McGraw-Hill, New York, N.Y.

Victor, M. (2001). Principles of Neurology (7th edition). McGraw-Hill, New York, N.Y.