

APK 4115
Neuromuscular Aspects of Exercise
Spring 2019

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Office Hours: By Appointment

Class Room: FLG 0210
Class Days: MWF
Class Time: Period 1 (7:25-8:15 am)
Class #: 10799

Course Overview

University of Florida Course Description: Designed to provide an in-depth analysis of muscle structure and function; how muscles produce movement; adaptation of muscle to resistance training, endurance training and various manipulations used in rehabilitation; adaptation of muscle to disuse; and muscle responses to injury.

Prereq: APK 3110C with grade of C.

Textbook

RM Enoka. Neuromechanics of Human Movement. 5th edition. Human Kinetics. ISBN 978-1-4504-5880-1 (optional – not required)

Handouts and review papers will be provided for specific topics (see schedule).

General Course Policies

Attendance: Make every effort to attend all lectures. Although attendance will not affect your grades directly, it could influence them indirectly. Numerous concepts that will be discussed only during class (and are not in the book) will be part of your weekly quizzes. <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Make-up quizzes: Unexcused absences on quiz days will result in a zero on the quiz. If you are ill or have an emergency that prevents you from taking the quiz at the scheduled time, it is your responsibility to contact the instructor as soon as possible. There will be no make-up quizzes. Instead, in case of an excused absence, the following quiz will count twice (after the 3 allowed to be dropped). Documentation of the illness or emergency will be required.

Accommodations: Students requesting classroom or other special accommodations must first register with the Dean of Students Office—Disability Resource Center (DRC).

The Dean of Students Office will provide documentation to the student who must then present the documentation to the instructor when requesting accommodation. For optimal consideration, you must see the professor within the first three days of class.

Technology: The use of cell phones* (and the like) is strictly prohibited during lectures and exams. Any cell phone or other electronic device used during an exam will be considered a violation of the student honor code (i.e., cheating) and will result in stiff penalties. Laptop computers are welcome in class as long as you are using it for class-related work. Surfing the web, checking your email, making Facebook posts, or anything of that nature is strictly prohibited. Violation of this policy will result in point deductions at the discretion of the instructor.

Communication: You are responsible for checking announcements and course postings on E LEARNING. This is how your course instructor will communicate with you. All course grades will be posted on E LEARNING. Any discrepancies should be pointed out to the instructor on or before the last day of finals week.

Academic Honesty: On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: ***"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*** Any student found violating this honor code will receive a zero for that exam or assignment and may be assigned other educational sanctions at the instructor's discretion.

<https://sccr.dso.ufl.edu/process/student-conduct-code/>

Evaluations: Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of the assessments will also be available to students at website.

Counseling and Wellness Center:

<http://www.counseling.ufl.edu>

392-1575

University Police Department: 392-1111 or 9-1-1 for emergencies

Student Learning Objectives

Knowledge: Discuss, explain, and defend subject matter relevant to neuromuscular physiology.

Skills: Discuss, explain, and defend specific skills related to neuromuscular physiology.

Professional Behavior: Demonstrate proficiency in presenting and explaining neuromuscular physiology concepts in a professional manner.

Course Examinations and Grading

Activity/Assignment	Points
1. Quizzes x 11	22
2. Presentation	30
3. Presentation attendance	8
4. Exam 1	20
5. Exam 2	20
TOTAL POINTS	100

Exams

There will be no final exam for this course. Grading will be based on weekly take home quizzes, two exams (Exam 1; 2), presentation, and presentation attendance.

Take Home Quizzes (22%)

There will be a total of 11 quizzes and you will be allowed to drop NONE.

All quizzes will be TAKE HOME. You will receive them the day of the quiz (usually Friday) and they will be due the following class day (typically Monday) in TYPED paper form on my desk during class. If you will miss that day, please arrange with a colleague to bring your quiz in. A format of the quiz will be provided in CANVAS at the beginning of the class. Questions will come from material (lectures and presentations) presented to you since the previous quiz.

Presentation (30%)

This presentation will be based on a research article that I will provide for you. At the first class you will sign-up to a presentation slot. There will be 2-3 people per presentation.

The length of the presentation should be **15 minutes** and should be in the format of a powerpoint presentation. The 15 minute limit is strict and you will be cut short if you go over your time. My suggestion, therefore, is to practice the presentation ahead of time. Conciseness, clarity, and information delivery will be part of your grade. There will be a 2 minutes question-answer session after each presentation. This presentation will worth 30% of your course grade.

Each member will grade the other group members for participation in the presentation. The average score from your group mates will be multiplied with my grade. For example, if I gave you 30% for your presentation and your group mates scored your participation to the presentation at 50%, your individual score will be 15%.

Presentation attendance (8%)

I will take attendance on presentation day. There are 12 presentation days. You can drop one. Each attendance will count for 0.73% of your grade. There will be a sign up/attendance on each presentation day.

Exam 1 (20%)

This exam will cover the lectures and presentations from Jan 7th to February 18th. It will

comprise of short answer questions. This exam will count for 20% of your grade.

Exam 2 (20%)

This exam will cover the lectures and presentations from February 25th to April 22nd. It will comprise of short answer questions. This exam will count for 20% of your grade.

Grades: The total points earned from quizzes and presentation will be summed. There is no curve for this course. I reserve the right to round up grades for students who show exceptional participation in class. However, under most circumstances GRADES WILL NOT BE ROUNDED UP!!! If you earn a 79.94%, you will receive a C+, not a B. The following grading scale will be used to assess students in this course. For more detailed information on current UF grading policies, please see the undergraduate catalog web page:

<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Letter Grade	Points Necessary for Each Letter Grade	Percent of Total Points	GPA Equivalent
A	93	93.00-100%	4.0
A-	90	90.00-92.99%	3.67
B+	87	87.00-89.99%	3.33
B	83	83.00-86.99%	3.0
B-	80	80.00-82.99%	2.67
C+	77	77.00-79.99%	2.33
C	70	70.00-76.99%	2.0
D+	67	67.00-69.99%	1.33
D	60	60.00-66.99%	1.0
E	<60	0-59.99%	0

Tentative Lecture Schedule

This approximates what the semester will consist of. This outline is subject to change at any point during the semester.

First half

Week	Date	Lecture Topic	Reading/Assign.
1	M – Jan 7	Syllabus explanation / Organization	Syllabus; <i>Slides</i>
	W – Jan 9	How to present scientific data in 15 minutes	<i>Slides</i>
	F – Jan 11	Synaptic transmission/ Muscle Anatomy / Structure	
2	M – Jan 14	Muscle mechanics	
	W – Jan 16	<i>Presentation – Groups 1,2</i>	
	F – Jan 18	<i>Take Home Quiz 1</i>	Quiz 1
3	M – Jan 21	MARTIN LUTHER KING DAY	
	W – Jan 23	<i>Presentation – Groups 3, 4</i>	
	F – Jan 25	<i>Take Home Quiz 2</i>	Quiz 2
4	M – Jan 28	Motor units I - Structure	
	W – Jan 30	<i>Presentation – Groups 5, 6</i>	
	F – Feb 1	<i>Take Home Quiz 3</i>	Quiz 3
5	M – Feb 4	Motor units II - Activation	
	W – Feb 6	<i>Presentation – Groups 7, 8</i>	
	F – Feb 8	<i>Take Home Quiz 4</i>	Quiz 4
6	M – Feb 11	Neural control of force	
	W – Feb 13	<i>Presentation – Groups 9, 10</i>	
	F – Feb 15	<i>Take Home Quiz 5</i>	Quiz 5
7	M – Feb 18	Motor Output Variability	<i>Slides</i>
	W – Feb 20	REVIEW SESSION for EXAM 1	
	F – Feb 22	EXAM 1	EXAM 1

Second half

Week	Date	Lecture Topic	Reading/Assign.
8	M – Feb 25	Voluntary actions	
	W – Feb 27	<i>Presentation – Groups 11, 12</i>	
	F – Mar 1	<i>Take Home Quiz 6</i>	Quiz 6
9	M – Mar 4	SPRING BREAK	
	W – Mar 6	SPRING BREAK	
	F – Mar 8	SPRING BREAK	
10	M – Mar 11	Spinal reflexes and Automatic responses	
	W – Mar 13	<i>Presentation – Groups 13, 14</i>	
	F – Mar 15	<i>Take Home Quiz 7</i>	Quiz 7
11	M – Mar 18	Acute Adjustments – <i>Fatigue</i>	
	W – Mar 20	<i>Presentation – Groups 15, 16</i>	
	F – Mar 21	<i>Take Home Quiz 8</i>	Quiz 8
12	M – Mar 25	Acute Adjustments – <i>Stress</i>	
	W – Mar 27	<i>Presentation – Groups 17, 18</i>	
	F – Mar 29	<i>Take Home Quiz 9</i>	Quiz 9
13	M – Apr 1	Chronic Adaptations – <i>Aging</i>	
	W – Apr 3	<i>Presentation – Groups 19, 20</i>	
	F – Apr 5	<i>Take Home Quiz 10</i>	Quiz 10
14	M – Apr 8	Chronic Adaptations – <i>Motor Learning</i>	
	W – Apr 10	<i>Presentation – Groups 21, 22</i>	
	F – Apr 12	<i>Take Home Quiz 11</i>	Quiz 11
15	M – Apr 15	<i>Presentation – Groups 23,24</i>	
	W – Apr 17	REVIEW SESSION FOR EXAM 2	
	F – Apr 19	<i>Presentation – Make up day</i>	
16	M – Apr 22	EXAM 2	EXAM 2
	W – Apr 24	<i>Presentation – Make up day</i>	
	W – April 27	Final Exam time(10-12pm) used as makeup time	