

NEUROMUSCULAR ASPECTS OF EXERCISE

APK 4115 ~ 3 CREDITS ~ FALL 2020

INSTRUCTOR: Professor Evangelos A. Christou
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Preferred Method of Contact: email

OFFICE HOURS: By appointment

MEETING TIME/LOCATION: period 5 (11:45 am – 12:35 pm) - ZOOM

ZOOM LINK:

<https://ufl.zoom.us/j/91938480818?pwd=M1VNdVpMdlJZTENpaW9jS2pTeWwzZz09>

Passcode: 923384

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.

PREREQUISITE KNOWLEDGE AND SKILLS: APK 3110C with grade of C.

REQUIRED AND RECOMMENDED MATERIALS:

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).

COURSE FORMAT: The typical structure of the class is the following: Monday - lecture on the topic of the week; Wednesday – relevant presentation; Friday – Take home quiz. I take absences only during the presentation days.

COURSE LEARNING OBJECTIVES: Upon completion of this course, the student will be able to:

1. Knowledge: Discuss, explain, and defend subject matter relevant to neuromuscular physiology
2. Skills: Discuss, explain, and compare specific skills related to neuromuscular physiology
3. Professionalism: Present and explain vital, relevant concepts in neuromuscular physiology in a professional manner

COURSE AND UNIVERSITY POLICIES:

ATTENDANCE POLICY: 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>

PERSONAL CONDUCT POLICY:

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/>

EXAM MAKE-UP POLICY: Unexcused absences on quiz/exam days will result in a zero on the quiz/exam. 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. Documentation of the illness or emergency will be required. It is in the discretion of the instructor to provide a make-up quiz/exam or count the next one twice.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

HONORLOCK:

Honorlock System Requirements (exam proctoring): Exams will be proctored using HonorLock. You will not need to sign-up or schedule a testing time, nor will you need to create an account. To ensure your device is compliant with HonorLock, a series of pre-assessment checks must be performed before gaining access to the exam. Please do so in advance of the exam; we are unable to further accommodate for individual technological issues that may detract from your exam time. Specifications necessary for HonorLock to work are listed below:

System compatibility and setup:

- o HonorLock is only supported through Google Chrome web browser on Mac, PC (no other mobile devices or tables are supported)
- o Students must install the HonorLock Extension within Chrome
- o HonorLock will not support Windows 8, Windows 8.1, Mac OSX 10.11 and Mac OSX 10.12. You can find the updated Minimum System Requirements and a system compatibility test at www.honorlock.com/support.
- Additional considerations using HonorLock for exams:
 - o You will need to take the exam on a desktop computer or laptop with a webcam and microphone set up on your chosen device. This will not work on mobile devices or tablets, including iPads and smart phones.
 - o You need to make sure that the camera is facing YOU at all times – if the camera does not stay facing you or if you are out of frame, the exam will pause, preventing you from continuing even midway through. This will detract from your exam time.
 - o You need to open Canvas on the Google Chrome internet browser and to download the HonorLock Chrome Extension. Other internet browsers will not be compatible with HonorLock.
 - o Make sure you have a stable Internet connection wherever you are taking the exam (i.e. good Wi-Fi).
 - o A 360-degree scan of your testing room/environment will be required. If you are using a laptop, you will need to pick up your laptop and rotate it for the room scan, including your examination surface (i.e. desk, table), floor space, your lap, etc. The testing environment should be cleared of any clutter, no notes, or textbooks laying out. These could constitute a violation of the Honor Code (i.e. academic dishonesty).
 - o Make sure the room you are taking the exam in is well-lit and that you are by yourself. Rooms that are not bright enough may get flagged as “blurry” or “unclear”. Avoid posters or photographs on the wall behind you; try to minimize noise (i.e. talking aloud). These will also flag your exam, which will be reviewed by a member of the instructor team for the course to confirm or refute any academic dishonesty.
 - o You must have a valid and clear photo identification (ID) card (Gator ID, driver’s license, passport) to show at the start of the exam. Make sure the image is clear.
 - o Only one screen (i.e. cannot have multiple monitors) and one tab (i.e. the tab that is being used for the exam) in Chrome is allowed. HonorLock has an integrity algorithm that can detect search-engine use, so do not attempt to search for answers, even if it is on a secondary device.

- o An HonorLock Practice Quiz will be set up under Quizzes in Canvas. Please go through this practice test well in-advance of taking the exam. This practice quiz allows you to go through all of the pre-assessment checks so you will know what to expect when taking the exam itself. Take the practice quiz on the device you intend to take the exam on, in the same environment (building, room, etc).
- o Failure to meet the items above may result in a 0 grade. If you encounter any issues with the testing platform or the exam, you should immediately contact HonorLock for assistance. If this fails, you need to email your course instructor right away with specific details (i.e. screenshots of your chat conversation with HonorLock with time stamps) of what occurred so that they can assist you as quickly as possible.

ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

COURSE EVALUATIONS: Students in this class are participating in GatorEvals. This evaluation system is designed to be more informative to instructors so that teaching effectiveness is enhanced and to be more seamlessly linked to UF's CANVAS learning management system. Students can complete their evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Thank you for serving as a partner in this important effort.

GETTING HELP:

Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 392-1161
- University Police Department, 392-1111 (or 9-1-1 for emergencies)
<http://www.police.ufl.edu/>

Academic Resources

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

GRADING:

Course Examinations and Grading

Activity/Assignment	Points
1. Quizzes x 11	22
2. Group Presentation	23
3. Exam 1	25
4. Exam 2	25
TOTAL POINTS	100

Quizzes (22%)

There will be a total of 11 quizzes and you will not be allowed to drop ANY.

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).

You will need to submit them electronically in Canvas under assignments. Questions will come from material (lectures and presentations) presented to you since the previous quiz and watching relevant TED talks.

Group Presentation (23%)

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 23% 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 23% for your presentation and your group mates scored your participation to the presentation at 50%, your individual score will be 11.5%.

Exams

There will be no final exam for this course. Both exams will be on canvas and will be timed. Typically I ask 25-30 questions for the whole 50 min period.

Exam 1 (25%): This exam will cover the lectures and presentations from Aug 31st to Sep 30th. It will comprise of multiple choice and fill in the blanks questions. This exam will count for 20% of your grade.

Exam 2 (25%): This exam will cover the lectures and presentations from Oct 7th to Dec 2nd. It will comprise of multiple choice and fill in the blanks questions. This exam will count for 20% of your grade.

GRADING SCALE: The total points earned from exams, quizzes, writing assignment, attendance, 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>

Any requests for additional extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.

Letter Grade	Points Needed to Earn Each Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	≥ 93	90.00-100%	4.0
A-	90-93	90.00-100%	3.67
B+	87.00-89.99	87.00-89.99%	3.33
B	80.00-86.99	80.00-86.99%	3.0
C+	77.00-79.99	77.00-79.99%	2.33
C	70.00-76.99	70.00-76.99%	2.0
D+	67.00-69.99	67.00-69.99%	1.33
D	60.00-66.99	60.00-66.99%	1.0
E	0-59.99	0-59.99%	0

WEEKLY COURSE 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	Assign.
1	M – Aug 31	Syllabus explanation / Organization How to present scientific data in 15 minutes	
	W – Sep 2	Synaptic transmission/ Muscle Structure Muscle mechanics	
	F – Sep 4	<i>Take Home Quiz 1</i>	QUIZ 1
2	M – Sep 7	LABOR DAY	
	W – Sep 9	<i>Presentation – Groups 1, 2</i>	
	F – Sep 11	<i>Take Home Quiz 2</i>	QUIZ 2
3	M – Sep 14	Motor units I - Structure	
	W – Sep 16	<i>Presentation – Groups 3, 4</i>	
	F – Sep 18	<i>Take Home Quiz 3</i>	QUIZ 3
4	M – Sep 21	Motor units II - Activation	
	W – Sep 23	<i>Presentation – Groups 5, 6</i>	
	F – Sep 25	<i>Take Home Quiz 4</i>	QUIZ 4
5	M – Sep 28	Neural control of force	
	W – Sep 30	<i>Presentation – Groups 7, 8</i>	
	F – Oct 2	HOMECOMING	
6	M – Oct 5	<i>Take Home Quiz 5</i>	QUIZ 5
	W – Oct 7	<i>REVIEW SESSION for EXAM 1</i>	
	F – Oct 9	EXAM 1	EXAM 1

Second half

Week	Date	Lecture Topic	Assign.
7	M – Oct 12	Motor Output Variability	
	W – Oct 14	<i>Presentation – Groups 9, 10</i>	
	F – Oct 16	<i>Take Home Quiz 6</i>	QUIZ 6
8	M – Oct 19	Voluntary actions	
	W – Oct 21	<i>Presentation – Groups 11, 12</i>	
	F – Oct 23	<i>Take Home Quiz 7</i>	QUIZ 7
9	M – Oct 26	Spinal reflexes and Automatic responses	
	W – Oct 28	<i>Presentation – Groups 13, 14</i>	
	F – Oct 30	<i>Take Home Quiz 8</i>	QUIZ 8
10	M – Nov 2	Acute Adjustments – <i>Fatigue</i>	
	W – Nov 4	<i>Presentation – Groups 15, 16</i>	
	F – Nov 6	<i>Take Home Quiz 9</i>	QUIZ 9
11	M – Nov 9	Acute Adjustments – <i>Stress</i>	
	W – Nov 11	VETERANS DAY	
	F – Nov 13	<i>Take Home Quiz 10</i>	QUIZ 10
12	M – Nov 16	Chronic Adaptations – <i>Aging</i>	
	W – Nov 18	<i>Presentation – Groups 17, 18</i>	
	F – Nov 20	<i>Take Home Quiz 11</i>	QUIZ 11
13	M – Nov 23	THANKSGIVING	
	W – Nov 25	THANKSGIVING	
	F – Nov 27	THANKSGIVING	
14	M – Nov 30	Chronic Adaptations – <i>Motor Learning</i>	
	W – Dec 2	<i>Presentation – Groups 19,20</i>	
	F – Dec 4	<i>REVIEW SESSION for EXAM 2</i>	
15	M – Dec 7	EXAM 2	EXAM 2
	W – Dec 9	Makeup presentations	
	Fri Dec 18	Final Exam (12:30-2:30pm) used as makeup time	

SUCCESS AND STUDY TIPS:

Successful students in my class typically do the following:

1. Do not miss classes throughout the semester. A lot of the quiz and test material are given in class. A significant amount of information is not on the slides or in the book.
2. Take the presentation very seriously and start preparing ahead of time. The group presentation requires anywhere from 10-15 hours of outside class work.
3. Come prepared to the review sessions before the exam. Many concepts are clarified in those sessions.