

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Graduate Programs		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner _____ Catalog _____
	Department Exercise Science & Health Promotion College Science		
Current Course Prefix and Number PET 6382		Current Course Title Skeletal Muscle Plasticity	
Syllabus must be attached for ANY changes to current course details. See Guidelines . Please consult and list departments that may be affected by the changes; attach documentation.			
Change title to: Skeletal Muscle Physiology Change prefix From: No Change To: Change course number From: No Change To: Change credits* From: No Change To: Change grading From: No Change To: Academic Service Learning (ASL) ** Add <input type="checkbox"/> Remove <input type="checkbox"/>		Change description to: No Change Change prerequisites/minimum grades to: No Change Change corequisites to: No Change Change registration controls to: No Change	
* Review Provost Memorandum ** Academic Service Learning statement must be indicated in syllabus and approval attached to this form.		Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade.	
Effective Term/Year for Changes: Fall 2022		Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone Christopher Boerum/cboerum@fau.edu/954-892-8001			
Approved by Department Chair _____ College Curriculum Chair _____ College Dean <i>William David Kalie</i> _____ UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date _____ 2-28-2022 03-14-22 _____ _____ _____ _____ _____	

Email this form and syllabus to UGPC@fau.edu 10 days before the UGPC meeting.

PET 6382 Skeletal Muscle Physiology (3 credits)

Spring 2022; CRN: 19918; Room: College of Education 123; Mostly/Mixed Online: Thursday 5-6:20pm or Online

Department of Exercise Science and Health Promotion

College of Science

Florida Atlantic University

Professor: Andy Khamoui, Ph.D.

Assistant Professor, Dept. of Exercise Science & Health Promotion

Office: Fieldhouse 11-A, Room 128-B

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561.297.4450 (office)

Office hours: W 3-4PM via Webex/Zoom or by appointment

Course Description: Skeletal muscle comprises roughly 40% of body mass and is critical for locomotion and metabolic health. Skeletal muscle also demonstrates remarkable plasticity by adapting structure and function to a variety of signals such as injury, disuse, physical inactivity, exercise, nutrients, and disease. This course will explore skeletal muscle plasticity with a focus on pre-clinical rodent models and humans, but also other experimental systems where appropriate (e.g. cell culture, drosophila). By the end of the course you should be familiar with basic skeletal muscle physiology, how skeletal muscle is dysregulated in disuse and disease, and the variety of experimental approaches used to study this highly adaptable organ. Prerequisite: APK 4110 Exercise Physiology or permission of the instructor.

Textbook: No text is required for this course. All relevant course material will be posted on Canvas.

<u>Evaluation:</u>	Exams 3 @ 40 points each	120 points
	Abstract Write-up 1 @ 30 points	30 points
	Seminar presentations 3 @ 10 points each	<u>30 points</u>
		180 points total

Grading Scale:

Grading scale(%): A=100-93, A-=92-90, B+=89-87, B=86-83, B-=82-80, C+=79-77, C=76-73, C-=72-70, D+=69-67, D=66-63, D-=62-60, F=≤59

General Guidelines: You are expected to read and follow the syllabus. You are responsible for all information contained in readings, the lecture notes, labs, seminars and anything else verbally communicated by the instructor. Every effort will be made to follow the course schedule verbatim, however, the schedule is tentative and subject to change. Whenever possible, changes will be communicated in advance during class, via e-mail, or Canvas. Make-up examinations are not allowed without proper documentation. Cheating or plagiarism will result in a failing grade on the assignment, exam, or possibly the course. Should you be caught cheating, the Department of Exercise Science and Health Promotion will place a letter in your electronic file. The department reserves the right to dismiss you from the department.

Examinations: Exams will be administered in class and consist of *multiple choice and/or short answer/essay questions*. You are required to take the exam on the designated day and time. Make up tests will not be given unless there is a legitimate excuse (e.g. military commitment, court-imposed legal obligations, or illness requiring a doctor's visit on exam day -appropriate notification and documentation will be required.)

Abstract Write-up: The abstract write-up is based on the in-class activity where you will quantitate myofiber cross-sectional area. Images of muscle fiber cross-sections will be provided, and you will be required to trace individual fiber outlines and calculate mean fiber area using NIH ImageJ software. This software is freely available for download from the NIH website <https://imagej.nih.gov/ij/download.html>. The images provided to you will come from groups of mice subjected to different treatments, and basic statistics will be performed. The analyzed data will then be used to write your abstract, which *should not exceed 250 words*. This assignment is intended to provide you with an opportunity to refresh your statistical knowledge and succinctly communicate

technical information in a format used frequently in science (e.g. conference abstracts, abstract section of journal manuscripts).

Seminar Presentations: You will be required to present 3 powerpoint presentations throughout the semester on the themes listed in the course schedule. The specific topic must be emailed to the instructor at least 3 days prior to the scheduled presentation for approval. Each presentation should run for approximately 7-10 minutes in duration. The major purposes of these presentations are to comprehend and critique published research, generate ideas, and verbally communicate scientific information.

Code of Academic Integrity: Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see http://www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

Accommodations/Special Needs: In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton-SU133 (561-297-3880), in Davie-MODI (954-236-1222), in Jupiter-SR117 (561-799-8585), or at the Treasure Coast-CO128 (772-873-3305), and follow all OSD procedures.

Code of Academic Integrity: Students at Florida Atlantic University are expected to maintain the highest ethical standards. Dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. For more information, see http://wise.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

Course Schedule

Date	Topic
Jan 13	Course introduction
Jan 20	Skeletal muscle basics; In vitro and in vivo models of sarcopenia, disuse, injury, and disease
Jan 27	In vitro and in vivo models of exercise
Feb 3	Seminar 1: Skeletal muscle as an endocrine organ: role of myokines in inter-organ cross talk
Feb 10	Exam 1
Feb 17	Mechanisms of Protein turnover
Feb 24	In-class activity: determination of fiber cross-sectional area using NIH ImageJ software, statistical analysis, discussion of results
Mar 3	Seminar 2: Mechanisms of exercise-induced hypertrophy
Mar 10	Spring Break
Mar 17	Exam 2
Mar 24	Mitochondrial biogenesis, dynamics, and mitophagy Regulation of muscle mass by mitochondria
Mar 31	Assessment of mitochondrial function Interpretation of oxygraph Metabolic flexibility
Apr 7	Cancer cachexia
Apr 14	Seminar 3: Mitochondria and skeletal muscle health
Apr 21	Exam 3

COVID-19 statement: Due to the surge in COVID-19 cases and the omicron variant, all students regardless of vaccination status are expected to wear masks while indoors in any FAU facilities, including classrooms and laboratories. Students experiencing flu-like symptoms (fever, cough, shortness of breath) or students who have come in contact with confirmed positive cases of COVID-19 should immediately contact FAU Student Health Services (561-297-3512). Symptomatic students will be asked to leave the classroom to support the safety and protection of the university community. For additional information visit www.fau.edu/coronavirus. In classes with face-to-face components, quarantined students should notify me immediately as you will not be able to attend class. I will not be able to offer an online version of the class but will make reasonable efforts to assist students in making up the work.