

 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 5077		Current Course Title Seminar in Exercise & Aging	
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: Exercise Neuroscience 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 Kulis</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.

Seminar in Exercise & Aging PET 5077 (3 credits)

Fall 2022; CRN: 10560; Fully Online Course
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
akhamoui@fau.edu
561.297.4450 (office)
Office hours: T,Th 1:30-3PM via Webex/Zoom or by appointment

Course Description: A team-taught course highlighting the results of clinical exercise trials targeting the age-related loss in neuroprotective mechanisms and skeletal muscle function. Prerequisite: APK 4110 Exercise Physiology or permission of the instructor.

Course Objectives: The overall objective of this course is to develop competence in the scientific process, data analysis and presentation, technical writing and verbal presentation of scientific data within the context of exercise science and aging. These elements will be introduced on a small scale using anthropometric and performance data collected by you and your peers in class. On a larger scale, these objectives will be achieved by working with federally funded, publicly available clinical trial datasets that were collected and compiled at major research institutions. By the end of the course, you will be proficient in developing research questions, analyzing data with the appropriate statistics, interpreting the data, and presenting those interpretations in written and verbal form.

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

Evaluation:	Exams	2 @ 20 points each	40 points
	Abstract Write-up	3 @ 10 points	30 points
	Seminar presentations	2 @ 20 points each	<u>40 points</u>
			110 points total

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: **There are 2 exams in this course.** 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).

Publicly Available Data-Sets: You will gain firsthand experience working with large scale open access datasets in the areas of **human skeletal muscle aging and calorie restriction**. These studies were supported by federal funding and are therefore publicly accessible. The aim is to provide you with exposure to real world clinical trial data collected to help address important questions in human health. We will work with 2 such datasets: **GESTALT** and **CALERIE**. In small groups, you will pose a research question(s) within the context of the available data, apply statistics to analyze the relevant data, interpret the results, and formulate conclusions that are supported by the data. You will then: 1) individually write a summary of your findings as a structured technical abstract, and 2) with your group prepare a 15-20 minute PowerPoint presentation to report your findings as a free communication (both detailed below).

1) GESTALT Study. Genetic and Epigenetic Signatures of Translational Aging Laboratory Testing (GESTALT).

This long-term study was designed and conducted to learn more about biomarkers in human blood and tissues and their relationship to biological aging. Participants took part in a medical history, physical exam, blood and urine tests, MRI scans and heart tests. They did a baseline visit, followed by visits every two years for up to 10 years, during which they repeated the screening procedures, including balance and walking tests, leg and grip strength tests, health and mental state questions, and memory and problem-solving tests. We will use GESTALT to probe mechanisms of **Aging Skeletal Muscle** in humans. You will gain exposure to specific data subsets of the GESTALT study that examined the skeletal muscle transcriptome and proteome during healthy aging. The paper containing these datasets will be made available on Canvas and is referenced here for convenience: Tumasian et al. Skeletal muscle transcriptome in healthy aging. Nature Communications. 2021 Apr 1;12(1):2014. doi: 10.1038/s41467-021-22168-2. <https://pubmed.ncbi.nlm.nih.gov/33795677/>

For additional information on GESTALT, see the links below.

<https://clinicaltrials.gov/ct2/show/NCT02339012>

<https://grantome.com/grant/NIH/ZIA-AG000996-01>

2) CALERIE Study. Comprehensive Assessment of Long-Term Effects of Reducing Intake of Energy (CALERIE).

Calorie restriction (CR) refers to a reduction of average daily caloric intake, between 10% and 40%, without malnutrition and without affecting the intake of essential nutrients like vitamins and minerals. CR has been shown to have a positive impact on lifespan and health in a broad number of model organisms from single-celled organisms to non-human primates. The CALERIE clinical trial was the first study to focus specifically on the effects of sustained CR in humans. CALERIE demonstrated the feasibility of sustained human CR (for at least two years) and the favorable effects on predictors of longevity and cardiometabolic risk factors.

For additional information on CALERIE, see the link below.

<https://calerie.duke.edu/>

Abstract Write-up: There are 3 abstract write-ups based on 3 dataset analyses: 1 using the data we collect in class, and the other 2 on GESTALT and CALERIE. You will use the analyzed data to write your abstract, which *should not exceed 250 words*. You will follow the American College of Sports Medicine guidelines for 'Scientific Abstracts' to prepare your written abstract <https://www.acsm.org/docs/default-source/annual-meeting-documents/2021-washington-dc/21am-call-for-abstracts-booklet-v1.pdf>

This assignment is intended to provide you with an opportunity to succinctly communicate technical information in a written format used frequently in science (e.g. conference abstracts, abstract section of journal manuscripts).

Oral Free Communication: You will present 2 Oral Free Communication PowerPoint presentations with your **small group on your analysis from GESTALT and CALERIE**. The typical free communication will contain the following standard sections in the PowerPoint presentation: Introduction, Methods, Results, Discussion and

Conclusions. Each presentation should run for approximately 15-20 minutes in duration. The major purposes of these presentations are to provide you with an opportunity to verbally communicate scientific information in a commonly used format.

University Attendance Policy: Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of nonattendance. Attendance includes active involvement in class sessions, discussions, and activities, as well as professional conduct in class. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-sponsored activities (such as athletic or scholastic team, musical and theatrical performances, and debate activities). It is the student's responsibility to give the instructor notice prior to any anticipated absence, and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Professional ethics/policies and expectations: Students, as reflective decision-makers, choose to practice ethical behavior during class and in the university community. ESHP students are expected to demonstrate a professional demeanor in their FAU courses including attendance, participation and responsible attention to requirements and deadlines necessary for the successful completion of the ESHP program. ESHP students are also expected to demonstrate a professional demeanor through their actions and sensitivity to the students, teachers and administrators.

Code of 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.

Students with Disabilities: In compliance with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

Counseling and Psychological Services (CAPS) Center: Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

COVID-19 statement: Due to the surge in COVID-19 cases and the delta 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 <https://www.fau.edu/coronavirus/>. In classes with face-to-face components, quarantined or isolated 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. Vaccinated students have much lower chances of needing to quarantine and a much lower chance of missing class time.

I will deliver this class, as scheduled, in-person and will provide a remote option for students who are asked to isolate or quarantine or are unable to attend a class in-person for any other reason. Please note: All students may be required to attend in-person classes on specific dates at my discretion, for example to complete examinations. For students planning to attend in-person, I will teach in-person classes in the assigned classroom and on the scheduled day and time. For students who are unable to attend a class session in-person, I will provide course content in a remote format. I will post details on how a student can join the class remotely in Canvas. Please contact me if you have questions.

Course Schedule

Date	Topic
Aug 22	Syllabus and Course introduction
Aug 29	In Class Data Collection – Basic field tests, anthropometrics and performance.
Sept 12	Statistics and Research Basics I
Sept 19	Statistics and Research Basics II
Sept 26	Exam I <u>Abstract 1 due</u>
Oct 3	Skeletal Muscle Aging I – Background
Oct 10	Skeletal Muscle Aging II – Group Work
Oct 17	Skeletal Muscle Aging III – Group Work
Oct 24	Skeletal Muscle Aging IV – Presentations <u>Abstract 2 due</u>
Oct 31	CALERIE I – Background
Nov 7	CALERIE II – Group Work
Nov 14	CALERIE III – Group Work
Nov 21	CALERIE IV – Presentations <u>Abstract 3 due</u>
Nov 28	Exam II