Cover Sheet: Request 13109

APK 4XXX Fundamentals of Skeletal Muscle

Info

Process	Course|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Joslyn Ahlgren jahlgren@ufl.edu
Created	9/27/2018 3:08:43 PM
Updated	1/11/2019 2:29:22 PM
Description of request	We are proposing a new course, Fundamentals of Skeletal Muscle, that would provide advanced coursework focused on the anatomy, physiology, and specific pathologies of skeletal muscle.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	HHP - Applied Physiology and Kinesiology 012603000	Joslyn Ahlgren		9/27/2018
No document changes					
College	Approved	HHP - College of Health and Human Performance	Christopher Janelle		10/11/2018
No document changes					
University Curriculum Committee	Commented	PV - University Curriculum Committee (UCC)	Lee Morrison	Added to November agenda.	10/24/2018
No document changes					
University Curriculum Committee	Recycled	PV - University Curriculum Committee (UCC)	Casey Griffith	Please resubmit to UCC once syllabus has been uploaded	11/27/2018
No document changes					
College	Approved	HHP - College of Health and Human Performance	Christopher Janelle		11/28/2018
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			11/28/2018
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					

Step	Status	Group	User	Comment	Updated
No document changes					
College Notified					
No document changes					

Course|New for request 13109

Info

Request: APK 4XXX Fundamentals of Skeletal Muscle
Description of request: We are proposing a new course, Fundamentals of Skeletal Muscle, that would provide advanced coursework focused on the anatomy, physiology, and specific pathologies of skeletal muscle.
Submitter: Joslyn Ahlgren jahlgren@ufl.edu
Created: 1/11/2019 2:24:38 PM
Form version: 4

Responses

Recommended Prefix APK
Course Level 4
Number XXX
Category of Instruction Advanced
Lab Code None
Course Title Fundamentals of Skeletal Muscle
Transcript Title Fund of Skel Muscle
Degree Type Baccalaureate

Delivery Method(s) On-Campus
Co-Listing No
Co-Listing Explanation n/a
Effective Term Earliest Available
Effective Year Earliest Available
Rotating Topic? No
Repeatable Credit? No

Amount of Credit 3
If variable, # min 0
If variable, # max 0
S/U Only? No
Contact Type Regularly Scheduled
Weekly Contact Hours 3
Course Description Provides a comprehensive background of skeletal muscle properties, focusing on key aspects of function at the protein, cellular and whole organ level. Major topics include muscle contraction and force generation, fuel sources and energy utilization, growth and development, and an introduction to pathology.
Prerequisites Junior status & APK2105c(B)
Co-requisites none
Rationale and Placement in Curriculum This will be offered as an approved elective.
Course Objectives 1. Name and describe structural components of a skeletal muscle, including intra- and extracellular organization.
2. Explain physiological mechanisms of skeletal muscle function, growth, aging, and adaptation.
3. Explain the pathophysiology of specific skeletal muscle disorders.
4. Describe common methods used in skeletal muscle research; and compare and contrast when these methods are best used.
5. Discuss and critically appraise scientific literature related to skeletal muscle.

Course Textbook(s) and/or Other Assigned Reading There is no required text for this course. However, a recommended reference textbook is “Muscle: Fundamental Biology and Mechanisms of Disease” edited by Joseph A. Hill and Eric N. Olson. Academic Press, 2012. Instructor will provide any other supplemental readings or materials for the course.
Weekly Schedule of Topics See attached syllabus
Links and Policies See attached syllabus
Grading Scheme There will be 4 exams each covering 1 segment of the course, and the exams will not be cumulative. These exams will comprise 80% of the grade. In addition, students will be formed into small groups, and be required to complete a special topic project within 1 segment of the course.

These will be presented during class time and help to emphasize concepts. The special project will be worth 20% of the final grade. Grading will be determined by a standard conversion of a percent score to a letter grade using the transformation shown in the syllabus and consistent with the UF grading policy. Grades will be calculated to the nearest 2 decimal places. See syllabus for presentation grading rubric.

Instructor(s) Elisabeth Barton, Ph.D.
Professor
Applied Physiology and Kinesiology
Office: Room 124 FLG
Email: erbarton@.ufl.edu

Fundamentals of Skeletal Muscle

Course Directors:
APK 4XXX
Elisabeth Barton, Ph.D.
Professor
Applied Physiology and Kinesiology
Office: Room 124 FLG
Email: erbarton@.ufl.edu

Meeting Times:
Tuesday, Period 2 (8:30 – 9:20)
Thursday, Period 2-3 (8:30 – 10:25)
FLG 280

Course Description:
This course provides a comprehensive background of skeletal muscle properties, focusing on key aspects of function at the protein, cellular and whole organ level. Major topics include muscle contraction and force generation, fuel sources and energy utilization, growth and development, and an introduction to pathology.

Course Learning Objectives:
Students will have met the course goals if they can:

- **Name** and **describe** structural components of a skeletal muscle, including intra- and extracellular organization.
- **Explain** physiological mechanisms of skeletal muscle function, growth, aging, and adaptation.
- **Explain** the pathophysiology of specific skeletal muscle disorders.
- **Describe** common methods used in skeletal muscle research and **compare** and **contrast** when these methods are best used.
- **Discuss** and **critically appraise** scientific literature related to skeletal muscle.

Course Prerequisites
The course is open to juniors and seniors who have earned a B or better in APK2105c (Applied Human Physiology with Lab).

Textbook:
There is no required text for this course. However, a recommended reference textbook is "Muscle: Fundamental Biology and Mechanisms of Disease" edited by Joseph A. Hill and Eric N. Olson. Academic Press, 2012. Your course instructor will provide access to supplemental readings or materials for the course.

Grading:
There will be 4 exams each covering 1 segment of the course, and the exams will not be cumulative. These exams will comprise 80% of the grade. In addition, students will be formed into small groups, and be required to complete a special topic project within 1 segment of the course. These will be presented during class time and help to emphasize concepts. The special project will be worth 20% of the final grade. Grading will be determined by a standard conversion of a percent score to a letter grade using the

transformation below. Grades will be calculated to the nearest 2 decimal places. Information on current UF grading policies for assigning grades can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	94.00-100%	4.0
A-	90.00-93.99%	3.67
B+	87.00-89.99%	3.33
B	84.00-86.99%	3.0
B-	80.00-83.99%	2.67
C+	77.00-79.99%	2.33
C	74.00-76.99%	2.0
C-	7.00-73.99%	1.67
D+	67.00-69.99%	1.33
D	64.00-66.99%	1.0
D-	60.00-63.99%	.67
E	0-59.99%	0.0

Presentation evaluation:

Students will be assigned a classic research paper that underlies the basis of one subject area of the course. Presentations will be made during class time, with anticipated length of 10-15 minutes.

The following points should be covered, and will be evaluated for the grade of the assignment:

1. Format: Powerpoint slides (5%)
2. Introduction and Background: What is the main goal of the study and what is the underlying problem the authors are trying to resolve? This is most important for the "classic" papers (25%)
3. Methods: Are there any innovative strategies used? What are the techniques that are central to the study? Remember to put this in context if the paper is >20 years old (25%)
4. Results: Review the figures, and stress the key findings (25%)
5. Discussion: Are you convinced by the results? What are the implications of the findings? What would be the next step? What are the holes/flaws? (20%)

A successful presentation will address all of the above, and bring in additional resources to help explain the details of the study. At the beginning of the course, these points to a successful presentation will be reviewed, and information will be retained on the E-learning site for reference. Following the presentation, faculty attending will provide feedback to the presenter in terms of what went well, and suggestions for improvement in future presentations.

Students with Disabilities and Special Needs:

Students requesting classroom accommodation must first register with the Dean of Student's Office. The Dean of Students Office will then provide documentation to the student who will provide this documentation to the instructor when requesting

accommodation. We are very tolerant of special needs; please contact one of the course directors to discuss any issues or concerns. More information about the UF Disability Resource Center can be found at: https://drc.dso.ufl.edu/.

Policy on Classroom Demeanor, Missing Class/ Exams:

Attendance is encouraged for all class time sessions. You will be excused from class if you have a legitimate reason to be gone; please send an email before class starts as to why you need to miss the class. These will be kept on file for the semester. Please note: the University has specific reasons that are acceptable for missing class, which apply to both undergrad and grad students. You can find this at https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx:

"In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved."

If you feel need for taking advantage of the University counseling services or mental health services, please call 392-1575 https://counseling.ufl.edu/services/
The University Police can be contacted at 392-1111 or 911 for emergencies.

In general, cell phones or computers are allowed in class, particularly to follow along with the lectures and assignments. However, please put your phone on "silent" or airplane mode during class and do not answer the phone or respond to a text message during class. If whatever you are doing is disturbing the class, you will be asked to leave.

If you miss an exam due to an excused absence, a make up exam will be scheduled at the earliest feasible date. If an exam is missed due to an unexcused absence, then a make up exam will be scheduled, but 10 points will be deducted from the final score for every 3 days of delay.

Policy on Ethics and Plagiarism and Cheating:

For written assignments the instructor submits all material to TURNITIN.com, which is designed to determine whether what you have written is original material. Penalties for plagiarism will be enforced in this class. It may have extreme consequences such as receiving an F (failure) for the entire class, depending on the severity of the infraction. Understanding this aspect of scholarship is required to prepare you as a scientist, scholar and professional. Please review the UF Honor Pledge Code for students https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/ which specifies a number of behaviors that are in violation of the code and possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct in others. Please contact me directly if you have any concerns about ongoing misconduct.

Course Evaluation:

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 2-3 weeks of the semester but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu. Good participation in these evaluations is extremely important for maintaining and improving the

quality of coursework at UF. Consider it a privilege to participate in UFs future by doing your evaluations. The outcome of these is used in many ways to make this a better environment for you and future students.

Tentative Schedule of Topics:

Week		Topic
1	23-Aug	Contractile Proteins
2	28-Aug	Mechanisms of Contraction
	31-Aug	Muscle Histology
3	4-Sep	Histology Diagnosis
	6-Sep	Action Potentials/NMJ/Motor Units/EMG
4	11-Sep	
	13-Sep	SR/EC Coupling
5	18-Sep	Calcium handling/signaling
	20-Sep	EXAM 1
6	25-Sep	Muscle Mechanics
	27-Sep	Fiber Types
8	2-Oct	Muscle Fatigue
	4-Oct	Metabolism
9	9-Oct	Mitochondria
	11-Oct	Energetics
10	16-Oct	EXAM 2
	18-Oct	Muscle Development
11	23-Oct	Post natal growth
	25-Oct	Hypertrophy
12	30-Oct	Atrophy (proteasome)
	1-Nov	Atrophy (autophagy)
13	6-Nov	Regeneration/Degeneration
	8-Nov	EXAM 3
14	13-Nov	Extracellular Matrix
	15-Nov	Biomechanics/Locomotion
15	20-Nov	Muscle Imaging
	22-Nov	NO CLASS Thanksgiving
16	27-Nov	Aging/Sarcopenia
	29-Nov	DMD/Neuromuscular Disease
17	4-Dec	EXAM 4