

Liverpool John Moores University

Title: SKELETAL MUSCLE PHYSIOLOGY, METABOLISM AND NUTRITION
Status: Definitive
Code: **6108SPOSCI** (123215)
Version Start Date: 01-08-2021

Owning School/Faculty: Sport and Exercise Sciences
Teaching School/Faculty: Sport and Exercise Sciences

Team	Leader
Sam Shepherd	Y

Academic Level: FHEQ6
Credit Value: 20
Total Delivered Hours: 41.5
Total Learning Hours: 200
Private Study: 158.5

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	20
Practical	2
Tutorial	17.5

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Lab Report	Lab Report	50	
Exam	Exam	Exam	50	2

Aims

This module aims to increase your understanding of the regulation of the metabolic processes by which muscles are provided with energy during exercise as well as examining the molecular mechanisms underpinning muscle adaptation to exercise training. Having drawn upon this theoretical knowledge, the module also aims to develop your ability to translate this information to the applied context of sports

nutrition with the goal of improving sports performance, training adaptations and recovery.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically evaluate the hormonal and cellular processes involved in the metabolic regulation of energy provision during exercise and the influence of pre- and during-exercise feeding on related metabolic pathways.
- 2 Critically evaluate the macronutrient and hydration requirements to support optimal sports performance.
- 3 Critically evaluate the metabolic responses to acute and chronic endurance, high intensity and resistance-type exercise, and the influence of inactivity and poor diet on related metabolic pathways leading to disease.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Lab Report	1	2	
Exam	1	3	2

Outline Syllabus

Methods in Skeletal Muscle Physiology, Metabolism & Nutrition
Regulation of Muscle Metabolism: The Basics
Regulation of Muscle Metabolism During Exercise
Adaptations to Exercise Training & Inactivity/Disease States
Nutrition for Optimising Exercise Performance

Learning Activities

Lectures
Tutorials/Seminars
Laboratory practical sessions
Self-directed learning

Notes

This module aims to provide you with a better understanding of the regulation of the metabolic processes by which muscles are provided with energy during exercise as well as examining the molecular mechanisms underpinning muscle adaptation to exercise training. Having drawn upon this theoretical knowledge, the module also aims to develop your ability to translate this information to the applied context of sports nutrition with the goal of improving sports performance, training adaptations

and recovery.