

Liverpool John Moores University

Title: ADAPTATIONS TO EXERCISE AND SPORTS TRAINING
Status: Definitive
Code: **7019SPOSCI** (114321)
Version Start Date: 01-08-2014

Owning School/Faculty: Sports Sciences
Teaching School/Faculty: Sports Sciences

Team	Leader
Anton Wagenmakers	Y

Academic Level: FHEQ7 **Credit Value:** 20.00 **Total Delivered Hours:** 30.00
Total Learning Hours: 200 **Private Study:** 170

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	24.000
Workshop	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1		40.0	
Exam	AS2		60.0	2.00

Aims

The purpose of this module is to develop and enhance the students' understanding of the adaptive responses to acute and chronic (training) exercise using human muscle and cardiovascular physiology, biochemistry and molecular biology as the underpinning disciplines. This knowledge should give students the theoretical and integrative insight in the development of exercise prescriptions to maximize athletic performance across a large range of sport disciplines, and to improve physical performance and health in people of all ages and covering a wide range of physical

activity levels and exercise capacities.

Learning Outcomes

After completing the module the student should be able to:

- 1 Synthesise information to demonstrate understanding of cardiovascular and musculoskeletal adaptations to training
- 2 Critically evaluate the mechanisms responsible for the adaptations to sport and exercise training
- 3 Appraise established state-of-the-art and novel research methodologies used to measure the impact of various training modes (endurance, resistance, high intensity interval and concurrent training) on the major health and performance variables

Learning Outcomes of Assessments

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

Essay	1	2	3
Exam	1	2	3

Outline Syllabus

Cardiovascular adaptations to training (cardiac, macrovascular and microvascular to include autonomous regulation mechanisms).

Training induced adaptations in fuel selection, aerobic exercise capacity, muscle mass and performance (force, peak power and endurance).

Training induced adaptations that increase skeletal muscle lipid metabolism and insulin sensitivity.

The exercise pressor reflex (linking muscle aerobic capacity to cardiovascular regulation during exercise).

Exercise to counteract inflammation and maintain immune function in obesity, ageing and chronic disease.

Learning Activities

Students are expected to attend interactive lectures (2 h session per week), wherein a combination of didactic teaching and group discussions will be used to develop critical understanding of the topics.

In addition, a large part of postgraduate-level study is based on directed independent learning outside of formal classes, including: extra reading, group work and keeping up-to-date with current events related to the subject. Undertaking this work, as directed by your tutors, will assist you in building on fundamental aspects learnt in class, but also in pursuing your own interests related to the subject of study. It is expected that you will commit your time to undertaking these independent study activities just as you would commit time to attending scheduled lessons.

Notes

Interactive lectures and group discussions are used to critically debate adaptive responses to acute and chronic exercise and its implications for exercise prescriptions for sport / physical performance and health.