

Liverpool John Moores University

Title: Physiology of Strength and Conditioning Exercise
Status: Definitive
Code: **5505SPRT** (128438)
Version Start Date: 01-08-2021

Owning School/Faculty: Sport and Exercise Sciences
Teaching School/Faculty: Nelson and Colne College Group

Team	Leader
Ian Sadler	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 48
Total Learning Hours: 200 **Private Study:** 152

Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Lecture	15
Seminar	8
Tutorial	15
Workshop	10

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Practice	Practical	Practical Skills (30-min)	40	
Exam	Exam	Oral Exam (30-min)	60	

Aims

The module will introduce students to the principles of the physiology of strength and conditioning, providing a comprehensive overview of the changes in physiologic function during exercise and due to exposure in extreme environments (hot, cold and hypobaric) and the implications for training and performance. The module will also address the effect of different types of training on performance, how to optimise sport

performance and age and gender considerations. Laboratory and field based physiological assessments will be utilised to demonstrate physiological changes under different exercise and environmental conditions and hence, apply the theory into practice. Students will discuss relevant fundamental theory and applied research concerning the administration and delivery of effective strength and conditioning training to elite athletes.

Learning Outcomes

After completing the module the student should be able to:

- 1 Perform several physiological measurements, which are used to evaluate and monitor improvements in training components of fitness (i.e. endurance, strength, power).
- 2 Design and safely implement effective training sessions to improve a specific athlete's strength, speed, endurance and power.
- 3 Justify the choice of exercise for a selected individual.
- 4 Explain the physiological adaptations that occur due to acute and chronic exercise training.

Learning Outcomes of Assessments

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

Practical Skills	1	2
Oral Exam	3	4

Outline Syllabus

Key Physiological components covered within this module:

- *Hormonal Regulation of Exercise*
- *The Energy Systems*
- *Body Composition and Effects*
- *Fatigue and its Effects*
- *Ventilation and Energy Metabolism*
- *Acute and Chronic responses to exercise*
- *Environmental influences on performance*

Key Strength and Conditioning components covered:

- *Types of Training (e.g., Aerobic, resistance, power)*
- *Practical sessions covering the demonstration and evaluation different exercises*
- *Periodisation of training programmes*
- *Excessive training, overreaching, overtraining*
- *Tapering for peak performance*
- *Detraining and retraining*

Learning Activities

This module will be delivered using a combination of theory and practical application, including lectures, seminars, practical sessions. Lectures will aim to provide students with information about training theory while practical session will allow earners to develop hands on practice and develop skills related to strength and conditioning. Students will typically receive 15 hours of theory delivery through lectures and classroom teaching, have 8 hours of seminars for which students will research and prepare their own materials to be discussed within their group(s), 15 hours of tutorials in which staff will assist them to apply their knowledge to practice and 10 hours of practical activities in the workshop.

Notes

None.