

Liverpool John Moores University

Title: BIOMECHANICAL PRINCIPLES
Status: Definitive
Code: **5015SPOSCI** (117539)
Version Start Date: 01-08-2019

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

Team	Leader
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Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 48
Total Learning Hours: 240 **Private Study:** 192

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	38
Practical	5
Tutorial	3

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	report	Lab report based on biomechanical data analysis	50	
Exam	Exam	Exam with a mixture of short and long answer questions	50	2

Aims

The aim of this module is to develop the understanding of biomechanical principles

and key measurement techniques for use in sport and exercise contexts.

Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse, interpret and report biomechanical data related to sports and exercise
- 2 Evaluate biomechanical principles in a sports and exercise context in terms of forces, motion and muscle action

Learning Outcomes of Assessments

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

Lab report	1
Exam	2

Outline Syllabus

Forces

Motion

Muscle activity

Projectile motion

Biomaterials

Work, energy and power

Angular kinetics

Segmental data and biomechanical models

Muscle and Tendon

Applications of the above in sport performance; health; sports injury; strength and conditioning; exercise equipment.

Learning Activities

Students will be required to attend lectures and demonstrations on a weekly basis and to complete tutorial/learning sheets. They will complete a laboratory report and an exam.

Notes

This module continues to build biomechanical knowledge by addressing fundamental principles on forces, motion and muscle action. The student will learn to independently apply the appropriate techniques to assess forces, motion and muscle action in an applied setting. The theoretical insights and practical experiences will be complemented with sessions highlighting applications from different sport and exercise related settings, as well as introductions into more advanced biomechanical methodologies.

