

Liverpool John Moores University

Title: BIOMECHANICAL PRINCIPLES
Status: Definitive
Code: **5103SPOSCI** (123203)
Version Start Date: 01-08-2021

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:** 20 **Total Delivered Hours:** 45
Total Learning Hours: 200 **Private Study:** 155

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	22
Practical	4
Workshop	17

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Biomec Rep	Biomechanics lab report based on forces and / or motion analysis	50	
Exam	Biom Exam	Biomechanics exam with short answer theoretical and numerical 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 skills
- 2 Evaluate biomechanical principles in a sports and exercise context in terms of forces, motion and muscle actions

Learning Outcomes of Assessments

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

Biomechanics Lab Report	1
Biomechanics Short Answer Exam	2

Outline Syllabus

Force analysis, including practical laboratory work and data analysis

Motion analysis, including practical laboratory work and data analysis

3D Kinematics, including practical laboratory work and data analysis

Combining motion and forces

Muscle activity and contraction, including practical laboratory work and data analysis

Acceleration and inertial sensors

Learning Activities

You will be required to attend lectures on a weekly basis and to engage with practical sessions. You will also have online activities, worksheets and data analysis and interpretation tasks. You will complete one laboratory report and an exam.

Notes

This module continues to build biomechanical knowledge by addressing fundamental principles on forces, motion and muscle action. You will learn the theoretical concepts behind key biomechanical analysis techniques before applying this knowledge in practical laboratory sessions and coursework. The theoretical insights and practical experiences will be complemented with online worksheets and data analysis tasks.

You will also be introduced to more advanced biomechanical methodologies and research areas in biomechanics.

