

### Summary Information

Module Code	5103SPS
Formal Module Title	Biomechanics
Owning School	Sport and Exercise Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
Sport and Exercise Sciences

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	5
Seminar	14

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

### Aims and Outcomes

Aims	This module aims to give students the knowledge and technical ability to describe, measure and explain human movement using the application of biomechanical principles. In this way, we can improve performance and reduce the risk of injury.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Analyse, report and interpret biomechanical data related to human movement
MLO2	2	Explain the biomechanical principles that underpin human movement and how they impact sports performance.

### Module Content

Outline Syllabus	Description and measurement of movement: Anatomy of motion, qualitative description and quantitative measurement of motion and forces. Biomechanics of running: Linear and angular kinematics and kinetics, principles of gait, footwear, in typical and amputee populations. Biomechanics of jumping: Dynamics (work-energy, impulse-momentum), projectile motion, performance testing. Advanced measurements in Biomechanics: 3D motion capture, and player load monitoring. Neuro-muscular basis of movement: Muscle strength, and structure for function, and muscle activation (electromyography). Kicking: Open and close kinetic chain, linear and angular motion, collision mechanics, projectile motion and fluid dynamics.
Module Overview	
Additional Information	BUES mapped.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Open Book Exam	50	2	MLO1
Report	Lab Report	50	0	MLO2

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Thomas O'Brien	Yes	N/A

#### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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