Biomechanics of Performance Analysis

Module Information

2022.01, Approved

Summary Information

Module Code	7510SPOSCI
Formal Module Title	Biomechanics of Performance Analysis
Owning School	Sport and Exercise Sciences
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Portobello Institute

Learning Methods

Learning Method Type	Hours
Lecture	24
Practical	24
Seminar	10

Module Offering(s)

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

Aims and Outcomes

Aims	This module aims to develop students' theoretical knowledge and understanding of biomechanical analysis for sport performance. The module will also aim to develop students' applied laboratory skills in conducting biomechanical assessments and interpreting biomechanical information for sports performance. Students will develop practical skills using different biomechanical analysis techniques including ecological and lab-based approaches. Students will develop the integrated data collection and processing skills needed to conduct and communicate biomechanical assessment effectively to inform performance enhancement in a range of individual and team sports environments.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Apply the process of motion capture and analysis in sport performance settings
MLO2	2	Evaluate research methods and technologies used in biomechanical analysis in sports performance settings.
MLO3	3	Apply appropriate biomechanical analysis for a range of sports performance requirements.

Module Content

Outline Syllabus	Fundamentals of biomechanics and movement analysis Motion capture of single and cyclical movement Current biomechanics research topics (including force platform, wearable devices, and ecological movement analysis) Use of motion analysis software and statistical analysis software for motion analysis and description in lab settings Use of motion analysis software and statistical analysis software for motion analysis and description in ecological settings Data cleansing/analysis including smoothing, error correction, outlier management, scaling and filtering Introduction to statistical measures of reliability
Module Overview	
Additional Information	This module provides an opportunity to focus on the use of biomechanical techniques to assess sports performance. Advanced methodologies in force and motion analysis will be examined along with biomechanical modelling and advanced analysis software. This module is fundamental to the collection of high-quality experimental data in biomechanics facilitating the exploration of movement in an individual and team sports performance setting. Students' knowledge and skills will be assessed through completion of individual assignments. Students are presented with opportunities to gain peer and lecturer formative feedback on their assessment within small group seminar sessions and individual tutor meetings that take place throughout the semester.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Laboratory Report	50	0	MLO1, MLO2, MLO3
Presentation	Oral Presentation	50	0	MLO1, MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Sigrid Olthof	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings