

Module specification

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Refer to guidance notes for completion of each section of the specification.

Module Code	SES404
Module Title	Mechanisms to explain Human Movement
Level	4
Credit value	20
Faculty	FSLS
HECoS Code	100433
Cost Code	GASP

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Applied Sport and Exercise Sciences	Core

Pre-requisites

N/A

Breakdown of module hours

Learning and teaching hours	20 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	16 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	36 hrs
Placement / work based learning	0 hrs
Guided independent study	164 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	08/12/2021
With effect from date	01/09/2022

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Date and details of revision	
Version number	1

Module aims

This module aims to:

1. Introduce and develop knowledge, understanding and analysis of Biomechanics through technique analysis.
2. Introduce and develop knowledge, understanding and analysis of Performance through notation analysis.
3. Study how performance analysis can inform the sport scientist, coaching practitioner, sports official and athlete.
4. Use a variety of tools and techniques to study gross and fine movements and Technical / tactical patterns in sport.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Demonstrate a comprehension of simple biomechanical principles involved in sport
2	Demonstrate an ability to use audio visual technology for effective biomechanical analysis.
3	Design an appropriate system for analysing aspects of performance within a sporting context
4	Describe how performance analysis processes can be used to assess performance in sport

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Assessment 1: Report (2000 words) The students will produce a report that will demonstrate the ability to record an action using an appropriate audio video medium. They will use the recorded sporting action to appropriately describe the sporting movement in terms of biomechanical principles using IT systems. Calculations will be completed to evidence both kinematic and kinetic elements.

Assessment 2: Case Study (2000 words) The student will produce a portfolio of work which will include a review of the literature relating to notation analysis in physical activity/sport.

They will use this information to design an appropriate system for analysing sporting performance/physical activity. This system will be applied through the use of cutting edge computer software to analyse a sport/physical activity and describe how the outcome of the analysis can be used to guide performance.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1, 2	Written Assignment	50
2	3, 4	Written Assignment	50

Derogations

N/A

Learning and Teaching Strategies

This module will be taught through a series of lectures, seminars, practical workshops and blended learning, with the primary emphasis on the application of theory to practice. Whilst lectures and seminars will be used for delivery of the theoretical components of the module, students will also be required to learn how to effectively use workplace leading computer software (Hudl SportsCode, NacSport, Kinovea and Quintic), these will be taught through workshops and blended learning opportunities.

As an additional aid to learning external links and reading materials will be highlighted. These will enable the student to identify strengths and weaknesses in their knowledge as well as opportunities to access resources in their own time. Formative learning opportunities will be provided throughout the module.

Elements of this module are maths based, support will be offered in-class as well as through the academic skills department.

Indicative Syllabus Outline

An appreciation of the physiological demands on players (player profiles, movement patterns, activity rates, training versus match demands, player specific demands).
 An appreciation of the psychological demands on players (team cohesion/dynamics, roles and responsibilities linked to goal-setting).

The assessment and calculation of kinematic principles in sport technique.
 The assessment and calculation of kinetic principles in sport technique.
 The understanding of projectile motion in respect of sport performance.
 Newtonian and non-Newtonian ways to describe motion
 The use of IT, Kinovea and recording media to analyse biomechanics in sport

The use of hand and computerised notation systems in the analysis of sport (use of, benefits and limitations).

The use of types of feedback (knowledge of performance, knowledge of results, verbal, visual and video).

The use of hand and computerised notation systems in the analysis of sport (use of, benefits and limitations).

Applied use of Sportscode and Nacsport.

The use of types of feedback (knowledge of performance, knowledge of results, verbal, visual and video).

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Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

Blazevich, J. (2017), *Sports Biomechanics, the Basics: Optimising Human Performance*. 3rd ed. London: Bloomsbury.

Watkins, J. (2014), *Fundamental Biomechanics of Sport and Exercise*. London: Routledge.

Hughes, M. and Franks, I. (2015), *The Essentials of Performance Analysis*. London: Routledge.

O'Donoghue, P. (2014), *An Introduction to Performance Analysis of Sport*. 2nd ed. London: Routledge.

Other indicative reading

Bartlett, R. (2014), *Introduction to Sports Biomechanics: Analysing Human Movement Patterns*. 3rd Ed. London: Routledge.

Carling, C., Williams, A. M. and Reilly, T. (2006), *Handbook of Soccer Match Analysis*. London: Routledge.

Franks, I. and Hughes, M. (2016), *Soccer Analytics: Successful Coaching Through Match Analysis*. Maidenhead: Meyer & Meyer Sport.

Grimshaw, P., Fowler, N., Lees, A. and Burden, A. (2006), *Instant Notes in Sport & Exercise Biomechanics*. London: Routledge.

McGarry, T., O'Donoghue, P., and Sampaio, J. (2013), *Routledge Handbook of Sports Performance Analysis*. London: Routledge.

Payton, C. and Bartlett, R. (2007), *Biomechanical Evaluation of Movement in Sport & Exercise*. London: Routledge.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged
Enterprising
Creative
Ethical

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Leadership and Team working
Critical Thinking
Emotional Intelligence
Communication