MODULE SPECIFICATION

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

Module Code:	SPT320

Module Title:	Biomechanics in Sports Science

Level:	3	**Credit Value:**	20

Cost Centre(s):	GASP	JACS3 **code**: HECoS code:	100433

Faculty	FSLS	**Module Leader:**	Julian Ferrari

Scheduled learning and teaching hours	20 hrs
Supervised learning eg practical classes, workshops	20 hrs
Total contact hours	**40** hrs
Guided independent study	160 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Applied Sport and Exercise Sciences Foundation Year	✓	☐

Pre-requisites
N/A

Office use only
Initial approval: 09/07/2020 Version no: 1
With effect from: 01/09/2020
Date and details of revision: Version no:

Module Aims
The module aims to: • *Introduce Sports Biomechanics and its underpinning theories and approaches to the student* • *Establish key terminology used within the discipline* • *Demonstrate the interrelationship between physiology, psychology and performance analysis* • *Introduce the concepts of qualitative and quantitative approaches to biomechanics* • *Introduce the relationship between physics and the sport and exercise environment* • *Provide a foundation of mathematical knowledge relevant to the area*

Module Learning Outcomes - at the end of this module, students will be able to	
1	Describe, using appropriate terminology, biomechanical principles relating to sports science
2	Demonstrate the use of quantitative biomechanics within a sporting environment
3	Demonstrate the use of qualitative biomechanics within a sporting environment
4	Demonstrate an ability to use basic mathematical functions to determine biomechanical concepts

Employability Skills **The Wrexham Glyndŵr Graduate**	**I = included in module content** **A = included in module assessment** **N/A = not applicable**
Guidance: complete the matrix to indicate which of the following are included in the module content and/or assessment in alignment with the matrix provided in the programme specification.	
CORE ATTRIBUTES	
Engaged	I
Creative	I
Enterprising	I
Ethical	I
KEY ATTITUDES	
Commitment	I
Curiosity	I
Resilient	A
Confidence	A
Adaptability	A
PRACTICAL SKILLSETS	
Digital fluency	I & A

Organisation	A
Leadership and team working	N/A
Critical thinking	I & A
Emotional intelligence	I
Communication	I

Derogations

N/A

Assessment:

Indicative Assessment Tasks:
*Guidance: please ensure you add indicative **word count** and **durations** within the narrative body of this section*

Assessment Tasks: In-Class Test – Students will be asked to complete a multiple-choice questionnaire designed to test the biomechanical knowledge students have gained during the lectures, seminars, workshops and independent learning opportunities.
The MCQ will be 1 hour in duration and submitted through Moodle.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1,2,3 & 4	In-class test	100

Learning and Teaching Strategies:

This module will be taught through a series of lectures, seminars, workshops and blended learning. The strategy is to allow the student to experience as closely as possible the impact biomechanics has on human movement and sporting capacity.

This will be supported through the use of the VLE, Moodle. Taught content will be made available in various formats to support student learning away from the classroom.

Syllabus outline:

- *Biomechanics in sport*
- *The biomechanics / physiology relationship*
- *The biomechanics / psychology relationship*

- *The biomechanics / performance analysis relationship*
- *What are qualitative biomechanics?*
- *What are quantitative biomechanics?*
- *The effects of physics on human movement*
- *The use of mathematics in biomechanics*

Indicative Bibliography:

Essential reading

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

Other indicative reading

Spathopoulos, V. M. (2013), An Introduction to the Physics of Sports, London: CreateSpace Independent Publishing Platform.

Williams, C., James, D., and Wilson, C. (2008), Mathematics and Science for Exercise and Sport: The Basics, London: Routledge.

Jordan, S., Ross, S., and Murphy, P. (2012), Maths for Science, Oxford: Open University.

Neill, Hugh., and Johnson, T. (2018), Mathematics: A complete Introduction: The Easy Way to Learn Maths (Teach Yourself), London: Teach Yourself.

McCaw, S. (2014), Biomechanics for Dummies, London: John Wiley and Sons.

Rea, S. (2015), Sports Science: A complete Introduction: Teach Yourself, Oxford: Open University.