

## MODULE DESCRIPTOR

### Module Title

Introduction to Biomechanics

Reference	HS1143	Version	2
Created	September 2024	SCQF Level	SCQF 7
Approved	June 2021	SCQF Points	15
Amended	September 2024	ECTS Points	7.5

### Aims of Module

Introduce students to the fundamental concepts and principles of biomechanics. This module will provide students with the theoretical basis required for the application of biomechanics in sport and exercise science.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Solve basic quantitative problems using mathematical reasoning.
- 2 Describe basic concepts of physics (mechanics) in relation to force and motion.
- 3 Solve statics and dynamics problems using vector methods.
- 4 Demonstrate the necessary professionalism through attendance at learning opportunities required for safe practice.

### Indicative Module Content

Basic algebra, geometry and trigonometry; vectors; linear and angular kinematics; linear and angular kinetics; projectile motion; Newton's laws of motion; statics; dynamics; levers; torques and muscle force; work, energy and power; effects of load on biological and non-biological structures.

### Module Delivery

Blended delivery comprising on campus and online learning and engagement. This will include Digital Learning Resources, Keynote lectures and Tutorials.

### Indicative Student Workload

	Full Time	Part Time
Contact Hours	36	N/A
Non-Contact Hours	114	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

**ASSESSMENT PLAN**

*If a major/minor model is used and box is ticked, % weightings below are indicative only.*

**Component 1**

Type: Examination      Weighting: 100%      Outcomes Assessed: 1, 2, 3  
 Description: Closed Book Exam

**Component 2**

Type: Coursework      Weighting: 0%      Outcomes Assessed: 4  
 Description: Minimal module attendance requirement of 70%

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

Component 1 grade based on grading proforma. Component 2 is a minimum modular attendance requirement of 70%

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	Component 1 A; Component 2 Pass
<b>B</b>	Component 1 B; Component 2 Pass
<b>C</b>	Component 1 C; Component 2 Pass
<b>D</b>	Component 1 D; Component 2 Pass
<b>E</b>	Component 1 E; Component 2 Pass
<b>F</b>	Component 1 F and/or fails Component 2
<b>NS</b>	Non-submission of work by published deadline or non-attendance for examination

**Module Requirements**

Prerequisites for Module	None, in addition to course entry requirements.
Corequisites for module	None.
Precluded Modules	None.

**INDICATIVE BIBLIOGRAPHY**

- 1 McGINNIS, P.M., 2020. Biomechanics of Sport and Exercise. 3rd ed. Champaign, IL: Human Kinetics.
- 2 HALL, S.J., 2019. Basic Biomechanics. 8th ed. London: McGraw Hill.
- 3 POTTER, M., 2021. Schaum's Outline of Engineering Mechanics: Statics. 7th ed. London: McGraw-Hill.