

## MODULE DESCRIPTOR

### Module Title

Introductory Biomechanics

Reference	HS1102	Version	3
Created	March 2017	SCQF Level	SCQF 7
Approved	June 2010	SCQF Points	30
Amended	August 2017	ECTS Points	15

### 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 Solve statics problems using vector methods.
- 3 Interpret data output from biomechanical equipment.
- 4 Solve dynamics problems using vector methods.
- 5 Describe basic concepts of mechanics in relation to force and motion.

### Indicative Module Content

Basic mathematics; vectors; descriptive statistics; linear kinematics; linear kinetics; Newton's laws of motion; angular kinematics and kinetics; levers; torques and muscle force; work; energy and power; effects of load on biological and non-biological structures; use and interpretation of data from selected biomechanical equipment including force platforms, contact mats and isokinetic dynamometer.

### Module Delivery

Lectures supported by tutorials and practical sessions in the laboratory

### Indicative Student Workload

	Full Time	Part Time
Contact Hours	68	N/A
Non-Contact Hours	232	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	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, 4, 5

Description: Examination will be sat in two parts. Part 1 at the end of semester 1 and part 2 at the end of semester 2.

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

Final module grade will be obtained by taking the average mark from part 1 and part 2 of the examination, using the criteria below. Re-sits will only be available for components which are awarded E, F or NS grades.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	≥70%
<b>B</b>	60-69%
<b>C</b>	50-59%
<b>D</b>	40-49%
<b>E</b>	30-39%
<b>F</b>	≥29%
<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.

**ADDITIONAL NOTES**

A pass will not normally be awarded for this module unless the student has attended a minimum of 80% of all learning opportunities.

**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.