1. **Title of the module**

SPOR3540 Anatomy and Biomechanics of Movement

1. **School or partner institution which will be responsible for management of the module**

The School of Sport and Exercise Sciences

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

4

1. **The number of credits and the ECTS value which the module represents**

30 (15 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn and spring

1. **Prerequisite and co-requisite modules**

None.

1. **The programmes of study to which the module contributes**

BSc Sport and Exercise Science (and with a year in industry)

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Identify the major bones, muscles and joints of the human body, and be able to relate their structure to functional movements
   2. Define basic biomechanical terms including: kinematic terms such as velocity and acceleration, force, mass, work, energy.
   3. Apply Newton’s Laws and the impulse-change in momentum relationship to basic two dimensional whole body movement.
   4. Use basic trigonometric and algebraic techniques to manipulate and solve equations of uniform acceleration.
   5. Describe the effect of air resistance on performance in sports such as cycling and tennis.
2. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Apply knowledge to the solution of familiar and unfamiliar problems
   2. Apply communication, presentation, numeracy and IT skills
   3. Apply problem solving skills
   4. Plan and manage learning
3. **A synopsis of the curriculum**

The module aims to provide students with a detailed working knowledge of the anatomy of the human musculoskeletal system and relevant supporting structures; and 2) a basic understanding of mechanical principles and their applications to sports performance and human movement in general. We will work by specifying a question about an aspect of sports performance, and then examining the mechanical principles that allow us to answer this question.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Hamill, J. and Knutzen, K.M. (2014) Biomechanical basis of human movement. 4th Ed. London: Lippincott Williams and Wilkins.

Hay, J.G. (1993) The biomechanics of sports techniques. 4th Ed. Englewood Cliffs NJ: Prentice-Hall.

McGinnis, P. (2020) Biomechanics of sport and exercise. 4th Ed. Champaign, IL: Human Kinetics.

Nordin, M. and Frankel, V. H. (2012) Basic biomechanics of the musculoskeletal system. 4th Ed. London: Lippincott Williams & Wilkins.

Nigg, B. and Herzog, W. (2007). Biomechanics of the Musculoskeletal System. 3rd Ed. Chichester: Wiley & Son.

Palastanga, N. and Soames, R. (2018). *Anatomy and Human Movement*. 7th edition, London: Churchill Livingston.

Winter, D. A. (2009) Biomechanics and Motor Control of Human Movement. 4th Ed. Chichester: Wiley & Son

1. **Learning and teaching methods**

Total contact hours: 44

Private study hours: 256

Total study hours: 300

1. **Assessment methods**
   1. Main assessment methods

Course work: 1 hour online test 1 (20%)

Course work: 1 hour online test 2 (20%)

Course work: 1 hour online test 3 (20%)

Coursework: 2000 word written report (40%)

13.2 Reassessment methods

Like-for-like

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 9.1 | 9.2 | 9.3 | 9.4 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** |  | **x** | **x** |  |  |  |
| Seminars | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Online test 1 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Online test 2 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Online test 3 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Written report | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

Anatomy and Biomechanics of movement is an inherently international subject that is taught and researched globally. This module has been designed with reference to educational standards published or recommended by the International Society of Biomechanics and the American Society of Sports Medicine and equips students to enter into the broader community. The reading list has been chosen to reflect the international nature of this subject area and to accommodate all students.

**FACULTIES SUPPORT OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
|  |  |  |  |  |
|  |  |  |  |  |