

Liverpool John Moores University

Title: CURRENT ISSUES IN BIOMECHANICS
Status: Definitive
Code: **7111SPOSCI** (124279)
Version Start Date: 01-08-2021

Owning School/Faculty: Sport and Exercise Sciences
Teaching School/Faculty: Sport and Exercise Sciences

| Team | Leader |
|-----------|--------|
| Mark Lake | Y |

Academic Level: FHEQ7
Credit Value: 20
Total Delivered Hours: 24
Total Learning Hours: 200
Private Study: 176

Delivery Options

Course typically offered: Semester 1

| Component | Contact Hours |
|-----------|---------------|
| Lecture | 4 |
| Practical | 8 |
| Tutorial | 12 |

Grading Basis: 50 %

Assessment Details

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|----------|-------------------|----------------------|---------------|---------------|
| Essay | AS1 | Essay 1 (1500 words) | 50 | |
| Essay | AS2 | Essay 2 (1500 words) | 50 | |

Aims

This module aims to develop and extend students' opportunity to investigate issues of current importance in Sport and Clinical Biomechanics. Students will gain valuable experience in critically appraising the literature and exploring recent research questions in the laboratory by developing skills in data collection, analysis and presentation.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically evaluate selected current issues in Biomechanics.
- 2 Critically appraise the literature in selected areas of biomechanical research.
- 3 Conduct experimental or analytical work in selected areas of biomechanical research.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

| | | |
|---------|---|---|
| Essay 1 | 1 | |
| Essay 2 | 2 | 3 |

Outline Syllabus

Topics to be covered include: muscle-tendon mechanics, bioengineering analysis, locomotive biomechanics; foot biomechanics; clinical biomechanics and human gait; advances in experimental techniques in biomechanics and virtual rehabilitation. The laboratory content of the module will involve using measurement skills developed in the Technical training module (3D movement analysis and force platform) to replicate an experimental study from the literature.

Learning Activities

Students are expected to attend lectures and demonstrations and to complete prescribed reading to develop and extend their knowledge and understanding of current biomechanical issues. In addition, participation in and completion of experimental / laboratory assignments is required to facilitate the completion of coursework tasks. It requires students to read up to date literature in the appropriate fields and to evaluate past and current directions. Tutorial components of the module will include the critical appraisal of selected research topics in biomechanics and the determination of current understanding in those areas.

Students will experience (attainment assessed by) extending/focusing their subject specific knowledge base associated with selected topics in biomechanics; achieve mastery and expertise in their subject specific practical skills in selected experimental techniques in biomechanics; extending/focusing their cognitive skills (in the areas of review, assimilation, and interpretation); furtherance of their transferable skills: students will have opportunities to extend independent learning skills, IT skills, extend appropriate problem solving skills, written communication skills and oral communication skills.

Notes

This module provides the opportunity to study selected topics of current issues in biomechanics applied to sport. It requires students to read up to date literature in the appropriate fields and to evaluate past and current directions. They will be presented with a variety of cutting-edge research topics in biomechanics applied to sport, exercise and clinical applications.