

Liverpool John Moores University

Title: BIOMECHANICS
Status: Definitive
Code: **5003SPOSCI** (114239)
Version Start Date: 01-08-2011

Owning School/Faculty: Sports Sciences
Teaching School/Faculty: Sports Sciences

Team	Leader
Jos Vanrenterghem	Y

Academic Level: FHEQ5
Credit Value: 24.00
Total Delivered Hours: 62.00
Total Learning Hours: 240
Private Study: 178

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	28.000
Practical	28.000
Tutorial	4.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	exam (short answer and numerical type)	40.0	2.00
Report	AS2	Laboratory reports (x2)	40.0	
Presentation	AS3	Poster presentation of minor project	20.0	

Aims

The aim of this module is to develop the understanding of biomechanical principles and measurement techniques for the evaluation of sports performance.

Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse sports skills in terms of linear and angular kinematics and kinetics
- 2 Analyse sports skills in terms of mathematical modelling and computer simulation
- 3 Develop competency in conducting and reporting experimental investigations in biomechanics.
- 4 Plan and conduct a group minor project and construct a poster

Learning Outcomes of Assessments

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

EXAM	1	2
Report	3	
Presentation	4	

Outline Syllabus

Forces

Linear and angular kinematics

Dynamics - Applications of Newton's Second law

Linear and angular kinetics

Fluid mechanics.

Experimental techniques in motion analysis, force analysis and electromyography

Computer simulation of motion

Learning Activities

Students will be required to attend lectures and demonstrations on a weekly basis and to complete tutorial/learning sheets. They will also have to complete laboratory assignments and a minor project which will be presented by poster format.

References

Course Material	Book
Author	Bartlett, R.
Publishing Year	1997
Title	Introduction to Sports Biomechanics
Subtitle	
Edition	
Publisher	London, E & F. N. Spon
ISBN	0-419-20840-2

Course Material	Book
Author	Hamill, J. and Knutzen, K. M
Publishing Year	2003
Title	Biomechanical Basis of Human Movement
Subtitle	
Edition	2nd
Publisher	Baltimore: Williams and Wilkins
ISBN	0-7817-3405-3

Course Material	Book
Author	Carr, G.A.
Publishing Year	2004
Title	Sport Mechanics for Coaches:
Subtitle	
Edition	2nd ed.
Publisher	Champaign, Illinois. Human Kinetics.
ISBN	

Course Material	Book
Author	McGinnis, P.M.
Publishing Year	2004
Title	Biomechanics of Sport and Exercise:
Subtitle	
Edition	2nd ed.
Publisher	Champaign, Illinois. Human Kinetics
ISBN	

Course Material	Book
Author	Grimshaw, P., Lees, A., Fowler, N. and Burden, A.
Publishing Year	2006
Title	Instant Notes in Sports Biomechanics.
Subtitle	
Edition	
Publisher	Oxford, BIOS Scientific Publishers.
ISBN	

Notes

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