Liverpool John Moores University

Title:	SPORTS BIOMECHANICS
Status:	Definitive
Code:	**6006SPOSCI** (114287)
Version Start Date:	01-08-2011
Owning School/Faculty:	Sports Sciences
Teaching School/Faculty:	Sports Sciences

Team	Leader
Mark Lake	Y

Academic Level:	FHEQ6	**Credit Value:**	24.00	**Total Delivered Hours:**	50.00
Total Learning Hours:	240	**Private Study:**	190		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	38.000
Practical	10.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS3	Exam (Essay type)	50.0	2.00
Essay	AS1		25.0	
Report	AS2		25.0	

Aims

The aim of this course is to provide the opportunity and means to study selected sports skills and actions from a biomechanical point of view and to develop the students' mathematical modelling skills.

Learning Outcomes

After completing the module the student should be able to:

1 Analyse selected sports skills interms of mechanical and biomechanical principles
2 Critically review selected sports skills in biomechanical terms
3 Apply more advanced techniques to the analysis of selected sports problems

Learning Outcomes of Assessments

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

EXAM	1	3
Essay	2	
Project Report	3	

Outline Syllabus

Technique analysis
Biomechanical analysis and interpretation of selected sports
e.g.swimming, gymnastics, weightlifting, athletics
Virtual rehabilitation
Sports equipment
Strength and conditioning biomechanics
Modelling with open SIMM.

Learning Activities

Students will be required to attend lectures and demonstrations on a weekly basis and to complete prescribed reading. They will also have to complete laboratory assignments and a project task in computer simulation.

References

Course Material	Book
Author	Bartlett, R.
Publishing Year	1999
Title	Sports Biomechanics - reducing injuries and improving technique
Subtitle	
Edition	
Publisher	London, E & F N Spon
ISBN	

Course Material	Book
Author	Zatsiorsky, V.
Publishing Year	2000
Title	Biomechanics in sport: Performance enhancement and injury prevention
Subtitle	
Edition	
Publisher	Blackwell Science, Oxford
ISBN	0-632-05392-5

Course Material	Book
Author	McGinnis, P.M.
Publishing Year	2004
Title	Biomechanics of Sport and Exercise.
Subtitle	
Edition	2nd.
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

The aim of this course is to provide the opportunity and means to study selected sports skills and actions from a biomechanical point of view. This is enhanced by a study of some numerical methods for solution of mathematical models of sport situations and supported by the use of appropriate mathematical software.