Liverpool John Moores University

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Title:	CLINICAL MOVEMENT ANALYSIS
Status:	Definitive
Code:	**7013SPOSCI** (114310)
Version Start Date:	01-08-2016
Owning School/Faculty:	Sport and Exercise Sciences
Teaching School/Faculty:	Sport and Exercise Sciences

Team	Leader
Gabor Barton	Y

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

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	12
Practical	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Essay (1500 words)	50	
Presentation	AS2	Case presentation (1500 words report and oral defence)	50	

Aims

This module aims to provide the conceptual and practical knowledge base that develops and extends your understanding of clinical movement analysis. The students will learn how to interpret gait analysis results in a clinical context through exposure to the current literature, specialised methods, and clinical case studies. They will also be exposed to the latest research developments in the unique area of

virtual rehabilitation. A long track record of academic staff in gait analysis and virtual rehabilitation ensures that students gain insight into both the theoretical and practical aspects of these important applications of biomechanics. The existing links and ongoing collaboration with the North West Movement Analysis Centre at Alder Hey Children's NHS Foundation Trust provide access to clinical case presentations and invited speakers.

Learning Outcomes

After completing the module the student should be able to:

1	Analyse and integrate the advanced concepts related to the theory and practice of clinical movement analysis
2	Produce and be able to interpret the results of a gait analysis report
3	Critically appraise the current literature in the methodological and applied aspects of clinical movement analysis

Learning Outcomes of Assessments

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

Essay	1	2	3
Case report and oral	1	2	3

Outline Syllabus

The module content includes:
Introduction to clinical movement analysis
Applied 3D movement analysis
QTM V3D problem based learning
Theory of normal gait
Physical examination
The role of gait analysis in cerebral palsy
Alder Hey Hospital's Gait Laboratory visit
Abnormal gait
Introduction to virtual rehabilitation
Movement re-training applications of virtual rehabilitation
Movement perturbations

Learning Activities

Attend lectures and demonstrations, complete prescribed reading, experimental laboratory assignments and coursework tasks. In addition, attend visiting lecture presentations.

The acquired skills include the methodological aspects, comprehension of the latest research advances as well as the role of gait analysis in clinical decision making. We

share the latest developments in virtual rehabilitation with a focus on the latest research and how this unique application can impact clinical practice.

We will cover basic concepts in the beginning and then progress towards a higher level of complexity. Your existing knowledge of measurement techniques and data reduction techniques will be refreshed first. This knowledge will be applied in the understanding of normal gait. You will then be exposed to the interpretation of genuine biomechanical data gathered while testing individuals with a variety of movement problems. One of the most challenging parts will be an engagement in the process of clinical decision making informed by biomechanical results. Finally you will gain insight into the theory of virtual rehabilitation through examples from our own research.

Notes

This module provides an opportunity to focus onto the clinical use of gait analysis. Aspects of the advanced methodology and the clinical decision making process will be visited.

Our world-class Biomechanics laboratories house cutting edge equipment waiting for you to use them. Optoelectronic cameras enable 3D movement capture, force and pressure platforms give information about global and local loads, virtual reality (CAREN system) provides interaction in real time. See our Biomechanics section on the RISES website for staff research which feeds into your studies.