London South Bank University

EST 1892

School of Applied Sciences

Module Descriptor

Module Title: Biomechanics 1

Module Code: ASC_4_404

Level: 4

Module Title	Biomechanics 1
Credit Value	20 CAT Points
Student Study Hours	Total Learning Hours: 200 Contact Hours: 45 Student Managed Learning: 155
Pre-requisite learning	None
Co-requisites	None
Excluded Combinations	None
Module Leader and contact details	Dr Darren James ☏ 0207 815 7992 ✉ jamesd6@lsbu.ac.uk E-233
School/Division	Applied Sciences/Human Sciences
Short Description	This module will extend the student's knowledge of human anatomy and the musculoskeletal system, whilst introducing the basic biomechanical concepts and terminology of human movement. It will primarily develop the student's knowledge of Newtonian principles underpinning common and sporting movement patterns. At the end of this module, the student will be able to provide a qualitative kinesiological assessment of a common or sporting movement pattern. The knowledge and skills developed will be assessed through two separate coursework elements.
Aims	The aims of this module are: 1. To develop knowledge of human musculoskeletal functional anatomy. 2. To develop knowledge of the terminology that describes movement. 3. To develop the student's knowledge of basic biomechanical concepts and Newtonian principles, which underpin common and sporting movement patterns.
Learning Outcomes	By the end of this module, students will be able to: 1. Understand the human musculoskeletal system. 2. Develop an understanding of the neuromuscular control of movement. 3. Understand how to describe human movement. 4. Understand the role of mechanical principles in the explanation of human movement. 5. Develop a competence for performing biomechanical analyses by way of video analysis, incorporating into this, the qualitative assessment of skilled and common movement patterns.
Employability	The module is designed to provide the students with a strong background in the analysis and explanation of human movement/sporting skills. These skills strongly underpin the competencies required in the fields of Sport and Exercise Science and Sports Coaching. The learning outcomes map against Skills Active REP's Levels 2 gym instructor certificate.
Teaching & Learning Pattern	Key lectures supported by practical sessions and student centred tasks.
Indicative Content	Human musculoskeletal system. Muscle function. Description of movement (planes of motion).

	Linear Kinematics. Angular Kinematics. Linear Kinetics. Angular Kinetics. Equilibrium and posture. Projectile motion.
Assessments *Elements and Weightings*	The module summative assessment will consist of *100% Coursework*: Element 1 (50%) Video-based Biomechanical assessment of a sporting or common movement pattern. More specific instructions on how to complete this assessment will be provided in week 7. Element 2 (50%) A selection of multiple choice questions (MCQ) relating to the indicative content of the module. This assessment (open-book) will be separated into two sub-elements and performed under exam conditions in Week 6 (50%, Anatomy & Kinesiology) and Week 13 (50%, Biomechanics) of the module. There will be formative assessments throughout the module relating to theoretical and practical comprehension.
Indicative Sources	**https://lsbu.rl.talis.com/lists/457E7372-4B49-E14F-B82F-FFEB242F847A.html**
Attendance	Minimum attendance is 80% of all sessions