UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title	Mathematics For Clinical Technologists
Module Code	ENM4005-B
Academic Year	2024/5
Credits	20
School	School of Engineering
FHEQ Level	FHEQ Level 4

Contact Hours	
Type	Hours
Lectures	48
Directed Study	128
Tutorials	24

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims

The aim of this module is to make students familiar with basic understanding of numerical mathematics as applied to mechanical and biomechanics suitable for the Clinical Technology students. This module focuses on foundation mathematics as well as mathematical analysis of human motion including quantitative maths applied for mechanical techniques for the analysis of human movement.

Outline Syllabus

In semester one and part of semester two students become familiar and learn foundation of maths including arithmetic of whole numbers, fractions, decimal numbers, percentage and ration, algebra, indices, simplifying algebraic expressions, factorisation, algebraic fractions, transposing formulae, solving equations, functions, sequence and series, sets, functions, graphs of functions, the straight line, the exponential of function, the logarithm function, measurement, introduction to trigonometry, trigonometrical function and their graphs, trigonometrical identities and equations, solution of triangles, vectors, table and charts, correlation and integration.

In semester 2 students become familiar with an introduction to applied maths for biomechanics, application of mathematics in biomechanics and collection of mathematical kinematic data (Unit of measurements, vectors and scalars) with many numerical examples and theories of maths.

Learning Outcomes	
Outcome Number	Description
01	Conduct basic numerical calculations which are essential for each undergraduate student to know.
02	Conduct a numerical calculation of velocity and acceleration using the first central different method
03	Conduct a numerical calculation of the area under a parameter-tie curve as well as carry out the conversions for the calculation of lower extremity angles.
04	Solve quantitative problems using basic mathematical and numerical techniques that employ angular kinematic principles and human movements. Students will learn basic numerical techniques related to human body and this will help them to be ready for other related modules in stage 2 and 3.

Learning, Teaching and Assessment Strategy

Key lectures (By blended learning: Online and face to face teaching) will deliver core content, providing students with the opportunity to acquire the information to enhance their knowledge and understanding of subject (LO 1,2,3,4). This will be complemented by many numerical examples and tutorials to allow students to apply this learning for future modules including biomechanics (LO 3,4). Directed study provides students with the opportunity to undertake guided reading and to develop their own portfolio of learning to enhance transferable skills and knowledge (LO 1,2,3,4). Quizzes will help students to understand mathematical aspects of basic human movements. This will be done by interactive teaching sessions with many hands out and questions/answers (LO1,2,3). Module material is blocked to assist self-paced learning. Principles, theory and practical calculation skills are developed in formal lectures and practised in tutorials and calculator-based classes with continual reflection and oral feedback.

It is a requirement of the Institution of Engineering and Technology (IET) that students MUST achieve a mark of at least 30% in assessment components weighted above 30% IN ADDITION to achieving a mark of at least 40% in the module overall. This requirement applies ONLY to students on IET accredited programmes, which is the BDA occurrence/version of the module.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Examination - Closed Book	Closed book Examination on campus (2 Hrs)	80%
Summative	Examination - Closed Book	Closed book examination on campus (2 Hrs)	20%

Reading List

To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:
This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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