M1F326790

22/23

24 October 2022



GLASGOW CALEDONIAN UNIVERSITY

Module Descriptor

Module Title Physics					Type STANDARD
Module Code M1F326790	Module M1F326	Module Abbreviation M1F326790			
Module LevelSchoolSCQF7School of Computing, Engineering and Built Environment			In Use Y		
Department Instrumentation	and Control				Credit Points 20
Occurrence GLAS-B	Trimester B	Max No	Min No	MAP Name Physics Version 1	Mark Scheme A40A3
Pre-Requisite	Knowledge				
Co-Requisite K	nowledge				

Prohibited Combinations

Module Structure

Activity Type	Total Hours
Assessment (PT)	18.00
Independent Learning (PT)	130.00
Lectures (PT)	30.00
Seminars (PT)	
Tutorials (PT)	12.00

Summary of Content

The aim of this module is to provide a fundamental knowledge and understanding of selected areas of physics of relevance to forensic investigation.

Learning Outcomes

On successful completion of this module students should be able to: 1. Perform a selection of basic measurement techniques; 2. Understand and apply the basic concepts of mechanics, thermal systems, electromagnetism and wave motion to solve problems; 3. Carry out related practical work in a safe manner and to record, interpret and report the experimental data gathered.

Teaching / Learning Strategy

Lectures supported by tutorials, problem solving workshops and laboratory practical's. eTutorials are delivered to students to allow instant feedback on performance. This is extended to eAssessment with feedback to students at the end of the assessment period. Interactive problem solving of tutorial questions by video with live commentary. The material listed in the syllabus will be covered in lectures by illustrations

from everyday life. Examples include: the importance of mechanics in forensic investigation and the design of safety systems, impact forces on people, the difference between heat and temperature, basic applications of electromagnetism, optical phenomenon such as interference and optical detection techniques. Students will receive individualised feedback on their performance through one-to-one contact with tutors at tutorials which will reinforce the students' learning.

Syllabus

Units and Measures: SI Units, Dimensional Analysis, Scalars and Vectors, presenting data. Mechanics: 1-d motion and forces, Energy & Work. Thermal Physics: Temperature, Thermal expansion. Heat capacity, Specific Heat, Heat Transfer, Ideal Gas Laws. Properties of Matter: Density, Pressure, Archimedes' Principle, Elasticity, stress, strain, Hooke's Law Waves: Longitudinal and Transverse waves, Wave equation, the Electromagnetic Spectrum, Polarised Light. Electricity and magnetism: charge, electric potential difference, electrical energy, magnetic forces and basic circuits. Optics: Reflection, Refraction, Interference, Diffraction Atomic Structure: Structure of the atom, Rutherford scattering, The Bohr Model, Line spectra. "N.B. The syllabus consists of a list of topics normally covered within the module. Each topic may not be dealt with in the same detail".

Indicative Reading

Transferrable Skills

During this module the students' problem solving skills will be developed. The course work will improve the students' skills in written communication. The laboratory work, which will be completed in pairs, will begin to develop the student's ability to interact with his / her peers.

Assessment Methods

Component	Duration	Weighting	Threshold	Description
CRSWRK		50		Log Book
CRSWRK		50		Problem Solving Exercises

Pass	Mark	

40%

Contact	Name	Occurrence	Trimester
Module Leader	PAUL MCKENNA		
Module Tutor	KAITLIN RAMSAY	GLAS-B	В
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Module Tutor		GLAS-B	В
Module Tutor	SHEILA SMITH	GLAS-B	В
Module Tutor	PAUL MCKENNA	GLAS-B	В