ZPHY C1102: Physics 2

Module Title:	Physics 2 (Physics for 1st science students semester 2)
Language of Instruction:	English

Credits:	5

NFQ Level:	8

Module Delivered In	6 programme(s)

Teaching & Learning Strategies:	This subject will be taught in three theory classes of one hour duration per week and one two hour practical class each week.

Module Aim:	The aim of this module is to provide the student with knowledge of the physics of waves, electricity and radioactivity, and to develop practical laboratory skills.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Practice scientific procedures, including measurement, recording and analysing experimental data. Identify and quantify basic sources of error in laboratory experiments.
LO2	Apply the physics principals covered in theory to relevant problems and the natural world.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

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Module Content & Assessment

Indicative Content
Waves Longitudinal and transverse. Wavelength. Frequency. Interference. Diffraction. Doppler shift. Resonance.
Light Laws of reflection and refraction. Image formation in plane mirrors, curved mirrors and lens. Applications of curved mirror and lens. Wave nature of light. Dispersion. Diffraction gratings. Polarisation.
Sound Frequency. Speed of sound. Harmonics. Resonance. Sound intensity.
Electromagnetism. Electric and magnetic forces. Electric current. Voltage. Resistivity. Resistance. Capacitors. AC and DC current. Electrical safety. Semiconductors. Electromagnetic Spectrum.
Radioactivity Radioactive decay. Half life and decay constant. Nuclear fission. Nuclear fusion. $E = mc^2$
Practicals Measurement and analysis of primary data. Applying theory to data sets. Working both independently and as part of a group. Observing safety protocols.

Assessment Breakdown	%
Continuous Assessment	30.00%
Practical	70.00%

Continuous Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	Three one hour exams during the semester.	1,2	30.00	n/a

No Project

Practical

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Two hour practical each week	1,2	70.00	n/a

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

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Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	12 Weeks per Stage	3.00
Laboratory	12 Weeks per Stage	2.00
Estimated Learner Hours	15 Weeks per Stage	4.33
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_SABTP_B	Bachelor of Science (Honours) in Biosciences with Biopharmaceuticals	2	Mandatory
CW_SABRE_B	Bachelor of Science (Honours) in Brewing and Distilling	2	Mandatory
CW_SAPHA_B	Bachelor of Science (Honours) in Pharmaceutics and Drug Formulation	2	Mandatory
CW_SAASC_D	Bachelor of Science in Analytical Science	2	Mandatory
CW_SABFQ_D	Bachelor of Science in Biosciences	2	Mandatory
CW_SASCI_C	Higher Certificate in Science in Applied Biology or Applied Chemistry	2	Mandatory