

<b>Module Title:</b>	Physics 2 (Physics for 1st science students semester 2)
<b>Language of Instruction:</b>	English
<b>Credits:</b>	5
<b>NFQ Level:</b>	6
<b>Module Delivered In</b>	<a href="#">6 programme(s)</a>
<b>Teaching &amp; Learning Strategies:</b>	This subject will be taught in three theory classes of one hour duration per week and one two hour practical class each week.
<b>Module Aim:</b>	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.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner should be able to:</i>	
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.
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b> <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
<b>Incompatible Modules</b> <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b> <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

**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**

**Module Workload**

<b>Workload: Full Time</b>		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
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**

<b>Programme Code</b>	<b>Programme</b>	<b>Semester</b>	<b>Delivery</b>
CW_SABTP_B	<a href="#">Bachelor of Science (Honours) in Biosciences with Biopharmaceuticals</a>	2	Mandatory
CW_SABRE_B	<a href="#">Bachelor of Science (Honours) in Brewing and Distilling</a>	2	Mandatory
CW_SAPHA_B	<a href="#">Bachelor of Science (Honours) in Pharmaceutics and Drug Formulation</a>	2	Mandatory
CW_SAASC_D	<a href="#">Bachelor of Science in Analytical Science</a>	2	Mandatory
CW_SABFQ_D	<a href="#">Bachelor of Science in Biosciences</a>	2	Mandatory
CW_SASCI_C	<a href="#">Higher Certificate in Science in Applied Biology or Applied Chemistry</a>	2	Mandatory