



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Combined Sciences		
Module Code	UZYREU-15-0	Level	Level 3
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Health & Applied Sciences	Field	Allied Health Professions
Department	HAS Dept of Allied Health Professions		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> See Learning Outcomes.</p> <p><b>Outline Syllabus:</b> Basic Concepts            SI units, including multiples and sub-multiples            Measuring and recording of quantities using standard laboratory equipment            Interpreting experimental results            Producing a laboratory report            Using and manipulating relevant physical formulae            Mass, weight and force</p> <p>Energy and Energy Transfers            Energy, work, power and efficiency            Heat energy, specific heat capacity and heat transfer            Kinetic and potential energy</p> <p>Waves            Wave properties and wave equation (<math>v = \lambda f</math>)</p>

## STUDENT AND ACADEMIC SERVICES

Refraction, reflection, endoscopy

Atoms and Bonding

Atomic structure (Bohr model of atom)

Atomic number, mass number and isotopes

Periodic Table

Elements and compounds

Covalent, ionic bonding

Simple chemical equations

Solubility

Radioactivity

Types of radiation,  $\alpha$ ,  $\beta$ ,  $\gamma$ , including properties and production

Radioactive decay, half-life and nuclear equations

Electricity

Current, voltage (potential difference). Generation, resistance and power

Simple circuits including series and parallel circuits

Circuit symbols and circuit diagrams

Ohm's Law

Forces

Scalars and vectors

Adding and resolving vectors

Force-extension relationships (Hooke's Law) for springs and some materials

Elastic and plastic behaviour

Turning effect of forces (moment/torque)

Equilibrium

Dynamics

Distance, displacement, speed, and velocity

Newton's laws of motion

Acidity

Acids, bases and alkalis

H<sup>+</sup> ions, pH scale

Neutralisation

Acidosis & alkalosis

Chemical Kinetics

Reaction rates, factors affecting rates

Simple collision theory

Catalysis

**Teaching and Learning Methods:** This module operates on the basis of 150 hours of study in total.

This includes 90 hours of scheduled teaching (comprising 35 hours of lectures, 10 hours of tutorials, 35 hours of laboratory sessions, and 10 hours of project supervision) plus 60 hours of independent study.

Scheduled learning may include a combination of face to face and online lectures, small group activities, supervised practicals, and demonstration.

Independent learning includes hours engaged with essential reading, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below.

## STUDENT AND ACADEMIC SERVICES

Part 3: Assessment			
Regular formative assessment will take place throughout the module delivery to enable students to gauge their progress and learning to date.			
Component A is a 1.5 hour exam covering physics and chemistry. This component offers the opportunity for students to demonstrate calculation skills.			
Component B is a Laboratory Report (1,250 words). This allows the student to demonstrate skills in presenting the outcome of a laboratory based exercise, in an appropriate and professional manner.			
First Sit Components	Final Assessment	Element weighting	Description
Laboratory Report - Component B	✓	30 %	Laboratory Report (1,250 words)
Examination - Component A		70 %	Exam (1.5 hour) (Physics and Chemistry)
Resit Components	Final Assessment	Element weighting	Description
Examination - Component A		70 %	Exam (1.5 hour) (Physics and Chemistry)
Laboratory Report - Component B	✓	30 %	Laboratory Report (1,250 words)

Part 4: Teaching and Learning Methods																							
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th>Module Learning Outcomes</th> <th>Reference</th> </tr> </thead> <tbody> <tr> <td>Demonstrate a knowledge of the SI system of units</td> <td>MO1</td> </tr> <tr> <td>Demonstrate a knowledge of atomic structure, and chemical bonding</td> <td>MO2</td> </tr> <tr> <td>Understand the simple wave model, electricity, radiation and radioactive decay</td> <td>MO3</td> </tr> <tr> <td>Explain and apply the laws of motion and the concepts of forces including weight</td> <td>MO4</td> </tr> <tr> <td>Understand simple chemical kinetics and demonstrate knowledge of acids and alkalis</td> <td>MO5</td> </tr> <tr> <td>Demonstrate analytical ability in a range of situations and evaluate material appropriately</td> <td>MO6</td> </tr> <tr> <td>Apply theoretical knowledge to practical contexts</td> <td>MO7</td> </tr> <tr> <td>Formulate and test hypotheses, record data and draw appropriate conclusions</td> <td>MO8</td> </tr> <tr> <td>Perform standard laboratory procedures</td> <td>MO9</td> </tr> <tr> <td>Establish and record observations and experimental work</td> <td>MO10</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Demonstrate a knowledge of the SI system of units	MO1	Demonstrate a knowledge of atomic structure, and chemical bonding	MO2	Understand the simple wave model, electricity, radiation and radioactive decay	MO3	Explain and apply the laws of motion and the concepts of forces including weight	MO4	Understand simple chemical kinetics and demonstrate knowledge of acids and alkalis	MO5	Demonstrate analytical ability in a range of situations and evaluate material appropriately	MO6	Apply theoretical knowledge to practical contexts	MO7	Formulate and test hypotheses, record data and draw appropriate conclusions	MO8	Perform standard laboratory procedures	MO9	Establish and record observations and experimental work	MO10
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## STUDENT AND ACADEMIC SERVICES

	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	90
	<b>Total Scheduled Learning and Teaching Hours:</b>	90
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>	

### Part 5: Contributes Towards

This module contributes towards the following programmes of study: