



## **Module Specification**

### **Combined Sciences**

Version: 2021-22, v3.0, 20 Jul 2021

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## Part 1: Information

**Module title:** Combined Sciences

**Module code:** UZYREU-15-0

**Level:** Level 3

**For implementation from:** 2021-22

**UWE credit rating:** 15

**ECTS credit rating:** 7.5

**Faculty:** Faculty of Health & Applied Sciences

**Department:** HAS Dept of Allied Health Professions

**Partner institutions:** None

**Delivery locations:** City of Bristol College

**Field:** Allied Health Professions

**Module type:** Standard

**Pre-requisites:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** Not applicable

**Features:** Not applicable

**Educational aims:** See Learning Outcomes.

**Outline syllabus:**

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

Energy and Energy Transfers

Energy, work, power and efficiency

Heat energy, specific heat capacity and heat transfer

Kinetic and potential energy

Waves

Wave properties and wave equation

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, 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

## **Part 3: Teaching and learning methods**

### **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.

**Module Learning outcomes:**

**MO1** Demonstrate a knowledge of the SI system of units

**MO2** Demonstrate a knowledge of atomic structure, and chemical bonding

**MO3** Understand the simple wave model, electricity, radiation and radioactive decay

**MO4** Explain and apply the laws of motion and the concepts of forces including weight

**MO5** Understand simple chemical kinetics and demonstrate knowledge of acids and alkalis

**MO6** Demonstrate analytical ability in a range of situations and evaluate material appropriately

**MO7** Apply theoretical knowledge to practical contexts

**MO8** Formulate and test hypotheses, record data and draw appropriate conclusions

**MO9** Perform standard laboratory procedures

**MO10** Establish and record observations and experimental work

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 60 hours

Face-to-face learning = 90 hours

Total = 150

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/index.html) via the following link <https://uwe.rl.talis.com/index.html>

## Part 4: Assessment

**Assessment strategy:** 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.

### Assessment components:

#### Examination - Component A (First Sit)

Description: Exam (1.5 hours) (Physics and Chemistry)

Weighting: 70 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

#### Laboratory Report - Component B (First Sit)

Description: Laboratory Report (1,250 words)

Weighting: 30 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO10, MO5, MO6, MO7, MO8, MO9

#### Examination - Component A (Resit)

Description: Exam (1.5 hours) (Physics and Chemistry)

Weighting: 70 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

**Laboratory Report - Component B (Resit)**

Description: Laboratory Report (1,250 words)

Weighting: 30 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO10, MO5, MO6, MO7, MO8, MO9

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Health Professions [Sep][FT][COBC][1yr] Found 2021-22