



Module Specification

Combined Sciences

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Part 1: Information

Module title: Combined Sciences

Module code: UZYREU-15-0

Level: Level 3

For implementation from: 2024-25

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Health, Science & Society

School: CHSS School of Health and Social Wellbeing

Partner institutions: City of Bristol College

Field: Allied Health Professions

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module explores basic physical and chemical concepts in order to assist the students biological understanding of their impact on health.

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

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 and characteristics

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⁺ ions, pH scale

Neutralisation

Acidosis & alkalosis

Enzymes (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.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Describe the structure of atoms and how this relates to different chemical states and reactivities

MO2 Describe and apply some of the principles of classical mechanics, for example scalars, vectors and forces.

MO3 Describe the general concepts of chemical equilibria in aqueous solutions, for example acidity and alkalinity.

MO4 Explain the principles of waves and the electromagnetic spectrum.

MO5 Apply scientific understanding critically, by carrying out experiments, analysing & presenting data, and solving problems using an appropriate academic tone.

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.

Assessment Task 1 is a 1.5 hour exam covering physics and chemistry. This

component offers the opportunity for students to demonstrate knowledge through a range of question types such as scenarios, multiple choice questions and general definitions, as well as calculations.

Assessment Task 2 is a Laboratory Report (1,250 words). This allows the student to demonstrate skills in evaluating laboratory findings and presenting the outcome of a laboratory based exercise, in an appropriate and professional manner.

Assessment tasks:**Examination (First Sit)**

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

Weighting: 50 %

Final assessment: No

Group work: No

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

Laboratory Report (First Sit)

Description: Laboratory Report (1,250 words)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO5

Examination (Resit)

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

Weighting: 50 %

Final assessment: No

Group work: No

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

Laboratory Report (Resit)

Description: Laboratory Report (1,250 words)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO5

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Health Professions [COBC] Found 2024-25