



University of the  
West of England

**CORPORATE AND ACADEMIC SERVICES**

**MODULE SPECIFICATION**

Part 1: Basic Data					
Module Title	Combined Sciences				
Module Code	UZYREU-15-0	Level	0	Version	1
Owning Faculty	Health and Applied Sciences	Field	Allied Health Professions		
Contributes towards	Foundation Programme for Health Professions				
UWE Credit Rating	15	ECTS Credit Rating	7.5	Module Type	Standard
Pre-requisites	None		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	Stand alone	
Valid From	September 2014		Valid to	September 2020	

<b>CAP Approval Date</b>	29/05/2014
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Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> <li>· Demonstrate a knowledge of the SI system of units (Component A)</li> <li>· Demonstrate a knowledge of atomic structure, and chemical bonding (Component A)</li> <li>· Understand the simple wave model, electricity, radiation and radioactive decay (Component A)</li> <li>· Explain and apply the laws of motion and the concepts of forces including weight (Component A).</li> <li>· Understand simple chemical kinetics &amp; demonstrate knowledge of acids &amp; alkalis (Components A &amp; B)</li> <li>· Demonstrate analytical ability in a range of situations &amp; evaluate material appropriately (Components A &amp; B)</li> <li>· Apply theoretical knowledge to practical contexts (Component B)</li> <li>· Formulate and test hypotheses, record data and draw appropriate conclusions (Component B)</li> <li>· Perform standard laboratory procedures (Component B)</li> <li>· Establish and record observations and experimental work (Component B)</li> </ul>

Syllabus Outline	<p><i>Basic Concepts</i>  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><i>Energy and Energy Transfers</i>  Energy, work, power and efficiency  Heat energy, specific heat capacity and heat transfer  Kinetic and potential energy</p> <p><i>Waves</i>  Wave properties and wave equation (<math>v = f\lambda</math>)  Refraction, reflection, endoscopy</p> <p><i>Atoms and Bonding</i>  Atomic structure (Bohr model of atom)  Atomic number, mass number and isotopes  Periodic Table  Elements and compounds  Covalent, ionic bonding  Simple chemical equations  Solubility</p> <p><i>Radioactivity</i>  Types of radiation, <math>\alpha</math>, <math>\beta</math>, <math>\gamma</math>, including properties and production  Radioactive decay, half-life and nuclear equations</p> <p><i>Electricity</i>  Current, voltage (potential difference). Generation, resistance and power  Simple circuits including series and parallel circuits  Circuit symbols and circuit diagrams  Ohm's Law</p> <p><i>Forces</i>  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</p> <p><i>Dynamics</i>  Distance, displacement, speed, and velocity  Newton's laws of motion</p> <p><i>Acidity</i>  Acids, bases and alkalis  H<sup>+</sup> ions, pH scale  Neutralisation  Acidosis &amp; alkalosis</p> <p><i>Chemical Kinetics</i>  Reaction rates, factors affecting rates  Simple collision theory  Catalysis</p>
Contact Hours	<p>This module operates on the basis of 150 hours of study in total.</p> <p>This includes 90 hours of scheduled teaching (comprising 35 hours of lectures, 10</p>

hours of tutorials, 35 hours of laboratory sessions, and 10 hours of project supervision) plus 60 hours of independent study.


Teaching and Learning Methods

**Scheduled learning** includes 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.

Key Information Sets Information

Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.

Key Information Set - Module data				
Number of credits for this module				15
Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Allocated Hours	
150	90	60	150	

The table below indicates as a percentage the total assessment of the module which constitutes:

**Written Exam:** Unseen written exam (Component A)

**Coursework:** Written Laboratory Report (Component B)

Total assessment of the module:	
Written exam assessment percentage	70%
Written Lab Report assessment percentage	30%
	100%

Reading Strategy

*Core readings*

Any essential reading will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, be given a study pack or be referred to texts that are available electronically, or in both Libraries. Module guides will also reflect the range of reading to be carried out.

*Further readings*

Further reading is advisable for this module, and students will be encouraged to explore at least one of the titles held in either library on this topic. A current list of such titles will be given in the module guide and revised annually.

*Access and skills*

	<p>Formal opportunities for students to develop their library and information skills are provided within the induction period. Additional support is available through the UWE Library Services web pages, including interactive tutorials on finding books and journals, evaluating information and referencing. Sign-up workshops are also offered by the UWE Library.</p>
Indicative Reading List	<p>The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. <i>Current</i> advice on additional reading will be available via the module guide or Blackboard pages. Students are directed to the websites and reading list below. They will also be expected to read more widely by identifying relevant material using the Module Handbook, and the Library Catalogue.</p> <p><i>Websites</i>  <a href="http://www.webelements.com/">http://www.webelements.com/</a>  <a href="http://www.chemguide.co.uk/atoms/properties/gcse.html">http://www.chemguide.co.uk/atoms/properties/gcse.html</a>  <a href="http://www.s-cool.co.uk/default.asp">http://www.s-cool.co.uk/default.asp</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/science">http://www.bbc.co.uk/schools/gcsebitesize/science</a></p> <p><i>Reading List</i>  Most of the books below are available in the LRC at Ashley Down. Other Chemistry and Physics books are also available at College Green and other college sites. For background reading and revision please look at the relevant topics that are covered in class.</p> <p>James, J. Baker, C. and Swain, H. (2002) <i>Principles of Science for Nurses</i>. UK: Blackwell Publishing  CGP. (2011) <i>The Revision Guide GCSE AQA Additional Science Higher level</i>. Kirkby-in Furness: CGP  CGP. (2011) <i>The Revision Guide GCSE AQA Core Science</i>. Kirkby-in Furness: CGP  Fullick, A. &amp; P. (2001) <i>Chemistry for AQA</i>. London: Heinemann  Muncaster, R. (1996) <i>A Level Medical Physics</i>. London: Stanley Thornes Ltd  Pope, J. (1999) <i>Medical Physics : Imaging</i>. London: Heinemann  Oman, D. &amp; R. <i>Physics for the Utterly Confused</i>. UK: McGraw-Hill  Clugston, M. and Flemming, R (2008) <i>Advanced Chemistry</i> Oxford: Oxford University Press  Nicholls, L. and Ratcliffe, M. (2000) <i>AS Chemistry AQA</i>. Glasgow: Collins  CGP. (2008) <i>The Revision Guide AS level Physics</i>. Kirkby-in Furness: CGP  Parson, R. (2004) <i>The Revision Guide AQA Co-ordinated Science Materials and their properties</i>. Kirkby-in Furness: CGP  CGP. (2004) <i>The Revision Guide AQA Co-ordinated Science Physical Processes</i>. Kirkby-in Furness: CGP  CGP. (2007) <i>GCSE Chemistry Complete Revision and Practice</i>. Kirkby-in Furness: CGP  Harwood, P. Hughes, M. Nicholls, L. (2001) <i>A2 Chemistry AQA</i>. Glasgow: Collins  Harper Collins. (2000) <i>AS Chemistry AQA student support materials. Module 1: Atomic structure, Bonding and Periodicity</i>. Glasgow: Harper Collins  CGP. (2012) <i>Head start to Chemistry</i>. Kirkby-in Furness: CGP</p>

### Part 3: Assessment

Assessment Strategy	<p>Regular formative assessment will take place throughout the module delivery to enable students to gauge their progress and learning to date.</p> <p><b>Component A</b> is a 1.5 hour written exam covering physics and chemistry. This component offers the opportunity for students to present short concise answers and demonstrate calculation skills.</p>
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	<b>Component B</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.
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Identify final assessment component and element	Component B	
% weighting between components A and B (Standard modules only)	<b>A:</b>	<b>B:</b>
	<b>70%</b>	<b>30%</b>
<b>First Sit</b>		
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1.Exam (1.5 hour) written exam (Physics and Chemistry)	100	
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1.Laboratory Report (1,250 words)	100	

<b>Resit (further attendance at taught classes is not required)</b>		
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1.Exam (1.5 hour) written exam (Physics and Chemistry)	100	
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1.Laboratory Report (1,250 words)	100	
If a student is permitted an <b>EXCEPTIONAL RETAKE</b> of the module the assessment will be that indicated by the Module Description at the time that retake commences.		