



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Earth Materials		
Module Code	UBGMP8-30-1	Level	Level 4
For implementation from	2019-20		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Environmental Mgmt		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> The composition of the Earth.</p> <p>Crystal symmetry, atomic structure and bonding, mineral lattices.</p> <p>Polarising microscope optics and interference colours.</p> <p>Oxide, silicate and carbonate minerals and classification.</p> <p>Isosilicates: olivines, solid solution series.</p> <p>Chain silicates: pyroxenes and amphiboles, phase diagrams.</p> <p>Sheet silicates: micas.</p> <p>Framework silicates: feldspars, quartz, phase transitions.</p> <p>Carbonates, mineral cements.</p>

## STUDENT AND ACADEMIC SERVICES

Economic minerals.

Igneous, and metamorphic rocks, classification and identification.

Principal theories and concepts in sedimentology, facies and associations.

Sediments.

Clastic sedimentary rocks, classification, provenance, sedimentary structures.

Coal. Chemical sedimentary rocks: ironstone, chert, evaporites.

Carbonates, classification, fossils.

Volcaniclastic sedimentary rocks.

Diagenesis, burial, changes in composition, cementation, dissolution.

Weathering and alteration products.

**Teaching and Learning Methods:** Students will receive 3 hours' contact time per week. This is essentially a laboratory-based module and practical sessions will be introduced by a short lecture and demonstration. One-to-one support will be provided during practical sessions and via email.

Scheduled learning on this module includes lectures, demonstrations and practical classes and some field exercises. Independent learning includes hours engaged with essential reading, completion of practical work, assignment preparation and completion. These sessions constitute an average time.

Contact time (lectures and laboratory sessions): 72 hours

Assimilation, development of knowledge and independent reading: 158 hours

Exam preparation: 50 hours

Coursework preparation: 20 hours

Total study time: 300 hours

### Part 3: Assessment

Summative assessment:

Component A – Practical examinations (2 x 2 hours). Learning outcomes 1-6.

Examination 1 based on minerals, igneous and metamorphic rocks.

The emphasis will be on identification and interpretation of minerals and rocks in hand specimen and thin section. It will test understanding of mineral properties and mineral assemblages in different rock types.

Examination 2 based on sedimentary rocks.

The emphasis will be on identification and interpretation of clastic and carbonate rocks in hand specimen and thin section. It will test students' understanding of lithification and sedimentary processes.

The practical exams will examine students' ability to recognise and interpret minerals, sediments and rocks and apply these skills to unnamed specimens.

Component B – Referenced poster. Learning outcomes 1, 2, 4, 5, 7.

1000 words equivalent.

The poster will be based on a field or laboratory exercise that will require students to interpret a rock-forming environment.

Students will be given recommended reading in order to help with their interpretation.

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The poster will assess students' organisational and graphic presentation skills, their ability to undertake an interpretation exercise and their engagement with relevant literature.

Formative work:

Formative work will be set weekly during practical sessions for students' self assessment. Formative work will be an integral part of the reading strategy. Students will receive preparation exercises for the summative assessment including interpretation exercises and mock exams.

First Sit Components	Final Assessment	Element weighting	Description
Practical Skills Assessment - Component A		30 %	Practical examination 1 (2 hours)
Practical Skills Assessment - Component A	✓	30 %	Practical examination 2 (2 hours)
Poster - Component B		40 %	Referenced poster
Resit Components	Final Assessment	Element weighting	Description
Practical Skills Assessment - Component A	✓	60 %	Practical exam (3 hours)
Poster - Component B		40 %	Referenced poster

### Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	<b>Module Learning Outcomes</b>	<b>Reference</b>
	Demonstrate a broad knowledge of constituent materials of the Earth's crust	MO1
	Demonstrate an understanding of common mineral groups, their structure and properties	MO2
	Describe, identify and interpret common minerals using hand specimens and thin sections	MO3
	Articulate key concepts and principles in sedimentology	MO4
	Identify and interpret the sedimentary and diagenetic processes involved in the formation of sedimentary rocks	MO5
	Describe, identify and interpret common igneous, metamorphic and sedimentary rock types in outcrop, hand specimen and thin section	MO6
	Demonstrate independent engagement with academic literature	MO7
Contact Hours	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	228
	<b>Total Independent Study Hours:</b>	228
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	72

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	<b>Total Scheduled Learning and Teaching Hours:</b>	72
	<b>Hours to be allocated</b>	300
	<b>Allocated Hours</b>	300
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/modules/ubgmp8-30-1.html">https://uwe.rl.talis.com/modules/ubgmp8-30-1.html</a></p>	

<b>Part 5: Contributes Towards</b>	
<p>This module contributes towards the following programmes of study:</p> <p>Geology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2019-20</p> <p>Geology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20</p>	