



MODULE SPECIFICATION

Part 1: Information			
Module Title	Environmental Physics and Materials		
Module Code	UBLMSS-30-1	Level	Level 4
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Architecture and the Built Environment
Department	FET Dept of Architecture & Built Environ		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description
<p>Educational Aims: See Learning Outcomes.</p> <p>In addition to those listed in Learning Outcomes, the educational experience may explore, develop, and practise but not formally discretely assess the following:</p> <p>The use of ICT in recording, analysing and presenting data.</p> <p>Outline Syllabus: Materials:</p> <ul style="list-style-type: none"> Timber Bricks and Masonry Iron and Steel Non-Ferrous Materials Concrete Glass Polymers Finishes Emerging Materials

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Building Science:

Comfort and Health
 Climate and Weather
 Steady State Heat Flow
 Ventilation
 Condensation
 Noise, Room Acoustics
 Natural Lighting
 Artificial Lighting
 Solar Geometry
 Heat gains
 Combustion

Teaching and Learning Methods: The two strands of this module, Materials and Building Science, run throughout the year, each contributing to the understanding of the other.

One set of tutorials reinforce module content through, Q and A, worked examples and discussion. A separate set, focuses on the mathematical and analytic techniques required to fully understand and describe properties of materials and environments.

Laboratories and Demonstrations provide tangible evidence for, and explanation of, topics covered in the lecture course and develops the skills of observation, data collection, analysis and presentation.

Part 3: Assessment

Block 1: The Technical Report comprises online tests and short essays (light, thermal, acoustics) equivalent to 1600 words - 50%

Block 2: Online tests on construction materials (timber, metals, ceramics, energy) & one 1000 word technical report - 50%

The Online tests and short essays are used to consolidate the understanding of environmental physics and materials and to introduce the objective description of physical properties and events. Early in the first semester these tests will be used to provide formative feedback in mathematics skills in order to allow students to identify their needs, if any, for additional revision or catch-up study. Formative Feedback will be given for each of the short essays in Teaching Block 1 to help students identify the level they must achieve and how they might improve their skills.

The Technical report is used to integrate the strands of knowledge presented as separated topics and to introduce students to formal academic writing. The report is also used to test the students use of ICT. Formative Feedback will be given to help students improve their work for future years.

Resit strategy

Students will undertake 2 on line tests and 1 x 1,000 technical essay which is a synoptic assessment covering all teaching on the module.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component A		50 %	Block 1 assessment: Technical Report (1,600 words)
Report - Component A		50 %	Block 2 Assessment: Materials Students complete a series of Blackboard quizzes covering each construction material and complete a 1000 word essay.

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			The marks for the quizzes and essay are combined to produce a single summative mark for teaching Block 2.
Resit Components	Final Assessment	Element weighting	Description
Report - Component A		100 %	Block 2 Assessment: Materials Students complete two Blackboard quizzes and complete a 1000 word essay . This resit assessment is synoptic in nature.

Part 4: Teaching and Learning Methods																			
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:																		
	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Module Learning Outcomes</th> <th style="text-align: left;">Reference</th> </tr> </thead> <tbody> <tr> <td>Identify a range of common and emerging construction materials and discuss their properties.</td> <td>MO1</td> </tr> <tr> <td>Explain how each material can be analysed and evaluated using established scientific processes</td> <td>MO2</td> </tr> <tr> <td>Identify and summarise the legislative constraints affecting material selection, environmental design and energy efficiency.</td> <td>MO3</td> </tr> <tr> <td>Identify the different parameters of a building's materials and internal environment that contribute towards human health and comfort.</td> <td>MO4</td> </tr> <tr> <td>Explain the scientific principles underlying heat, humidity, light, sound, air quality, ventilation and combustion; and how each of these is influenced by different building materials.</td> <td>MO5</td> </tr> <tr> <td>Describe the role of energy systems in providing healthy and comfortable environments.</td> <td>MO6</td> </tr> <tr> <td>Calculate the rates of energy flows in simple interactions between buildings, their environment.</td> <td>MO7</td> </tr> <tr> <td>Produce text and graphical material to describe the measurement of physical parameters.</td> <td>MO8</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Identify a range of common and emerging construction materials and discuss their properties.	MO1	Explain how each material can be analysed and evaluated using established scientific processes	MO2	Identify and summarise the legislative constraints affecting material selection, environmental design and energy efficiency.	MO3	Identify the different parameters of a building's materials and internal environment that contribute towards human health and comfort.	MO4	Explain the scientific principles underlying heat, humidity, light, sound, air quality, ventilation and combustion; and how each of these is influenced by different building materials.	MO5	Describe the role of energy systems in providing healthy and comfortable environments.	MO6	Calculate the rates of energy flows in simple interactions between buildings, their environment.	MO7	Produce text and graphical material to describe the measurement of physical parameters.	MO8
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Contact Hours	Independent Study Hours:																		
	Independent study/self-guided study	228																	
	Total Independent Study Hours:	228																	
	Scheduled Learning and Teaching Hours:																		
	Face-to-face learning	72																	
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	Hours to be allocated	300
	Allocated Hours	300
Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/modules/ublmss-30-1.html</p>	

Part 5: Contributes Towards	
<p>This module contributes towards the following programmes of study:</p> <p>Quantity Surveying and Commercial Management [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21</p> <p>Quantity Surveying and Commercial Management [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21</p> <p>Quantity Surveying and Commercial Management [Sep][PT][Frenchay][5yrs] BSc (Hons) 2020-21</p> <p>Quantity Surveying and Commercial Management {Apprenticeship} [Sep][PT][Frenchay][5yrs] BSc (Hons) 2020-21</p> <p>Building Surveying [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21</p> <p>Building Surveying [Sep][PT][Frenchay][5yrs] BSc (Hons) 2020-21</p> <p>Building Surveying [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21</p> <p>Building Surveying {Apprenticeship} [Sep][PT][Frenchay][5yrs] BSc (Hons) 2020-21</p> <p>Construction Project Management [Sep][PT][Frenchay][5yrs] BSc (Hons) 2020-21</p> <p>Construction Project Management [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21</p> <p>Construction Project Management [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21</p> <p>Building Services Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2020-21</p> <p>Building Services Engineering {Apprenticeship} [Sep][PT][Frenchay][5yrs] BEng (Hons) 2020-21</p> <p>Architectural Technology and Design [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21</p> <p>Architectural Technology and Design [Sep][PT][Frenchay][5yrs] BSc (Hons) 2020-21</p> <p>Architectural Technology and Design [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21</p> <p>Building Surveying {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20</p> <p>Building Surveying {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20</p> <p>Quantity Surveying and Commercial Management {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20</p> <p>Quantity Surveying and Commercial Management {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20</p> <p>Construction Project Management {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20</p> <p>Construction Project Management {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20</p> <p>Architectural Technology and Design {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20</p> <p>Architectural Technology and Design {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20</p>	