



MODULE SPECIFICATION

Part 1: Information			
Module Title	Investigating Structures		
Module Code	UBLLWH-30-1	Level	Level 4
For implementation from	2018-19		
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		

Part 2: Description
<p>Educational Aims: In addition to Learning Outcomes, the educational experience may explore, develop, and practise but not formally discretely assess the following:</p> <p>Working as a member of a group and meeting obligations to others within the module cohort.</p> <p>The use of learning resources in support of practical tests, including the use of technical resources and information in support of design decision-making.</p> <p>Professional habits of work, time-keeping and punctuality.</p> <p>Outline Syllabus: This module introduces and investigative approach to construction theory, material selection and building evaluation. The purpose of the module is to understand how buildings are constructed, why they are constructed in a particular way and from what. This is achieved by exploring the following key technical principles:</p> <p>Structural Theoretical Principles - tension / compression / shear / load etc.</p> <p>Traditional Materials and Technologies - brick, stone, timber, glass, steel, concrete</p>

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Energy in Buildings - U Values, Code for Sustainable Homes etc.

Assembly and the Construction Process - work schedules, mobilisation

Measuring Performance - Building Regulations, air tightness, code for sustainable homes etc.

Further exploration is covered by practical investigation:

Condition Appraisal and Report

Detailed Building Survey

Teaching and Learning Methods: The module time will be organised as follows:

80 hours contact time that includes lecture based sessions, workshop sessions exploring theories of construction, small group seminars and technical skills sessions

24 hours using surveying skills on site

18 hours are dedicated to laboratory sessions led by technical support staff

82 hours are scheduled for self directed learning in developing the output from survey work, case study preparation, design project and lab testing

24 hours technical report preparation

72 hours engaged with essential reading

Total = 300 hours

Scheduled learning:

As detailed above the strategy for the module is to introduce concepts and theories of construction, to develop the ability to understand building defects and condition, to undertake detailed site analysis and surveys, to complete a small design exercise and by calculating the required structural elements build and test part of the design. This will be achieved through the following methods: lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; supervised time in studio/workshop.

Independent learning:

In order to fulfil the requirements of the module a certain amount of independent learning is required. This time is used to support the taught contact sessions and in preparation of the technical assessment. This will be achieved through the following methods: hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. Scheduled sessions may vary slightly depending on the module choices you make.

The module culminates in a structural design intervention project following a defined project brief. This is designed to demonstrate an awareness of structure and theory. Part of the structure for this design will be modelled to scale in the workshop and tested in the lab as part of a final technical logbook underpinning the four strands of the module: Survey, Structure, Materials, Construction

Technical Report –this major part of the module output is to be an edited account of the student's work that demonstrates the knowledge they have gained from the lecture and seminar series, workshop and lab sessions associated with the module.

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Part 3: Assessment			
<p>25% of the module is assessed by a single written essay-style examination. This assessment type will be utilised in order to fulfil learning outcomes from the module where knowledge of the subject matter is required to ensure that students demonstrate a grasp of the key principles and theories.</p> <p>75% of the module is assessed by a substantial Technical Report submitted at the conclusion of the module in April/May. The report (3000 words) will contain the output from practical sessions including explanations and drawn output of survey work undertaken, design exercise, laboratory testing and data analysis allowing the students to demonstrate a complete grasp of the module requirements.</p> <p>The formative work is undertaken in small groups where in which set activities, research and reading are discussed in workshop sessions allowing students to get feedback on their work.</p>			
First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		75 %	Technical report (3000 words)
Examination - Component A	✓	25 %	Examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		75 %	Technical report (3000 words)
Examination - Component A	✓	25 %	Examination (2 hours)

Part 4: Teaching and Learning Methods																	
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th>Module Learning Outcomes</th> <th>Reference</th> </tr> </thead> <tbody> <tr> <td>Discuss the range of common principles of structural solutions and explain the basic theoretical concepts associated with each including load-bearing, frame and long span structures</td> <td>MO1</td> </tr> <tr> <td>Identify a range of common and emerging construction materials and technologies and explain how they are sourced and processed before being suitable for construction with emphasis on science, sustainability and environmental impact</td> <td>MO2</td> </tr> <tr> <td>Explain the process of building buildings making reference to the construction process, construction materials, order of assembly, work schedules</td> <td>MO3</td> </tr> <tr> <td>Understand the principles of measuring the performance of buildings with particular emphasis on environmental and passively designed structures; in order to evaluate basic energy costings</td> <td>MO4</td> </tr> <tr> <td>Appraise the physical condition of existing buildings by undertaking a detailed site and building analysis and survey report for a given structure</td> <td>MO5</td> </tr> <tr> <td>Apply skills to undertake a building survey of an existing structure in three-dimensions accurately using appropriate surveying equipment to set out and record the information logically and clearly</td> <td>MO6</td> </tr> <tr> <td>Design a small structural intervention that responds to the functional requirements of a defined brief and calculate the sizing of required components necessary to fulfil the safe load of that structure</td> <td>MO7</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Discuss the range of common principles of structural solutions and explain the basic theoretical concepts associated with each including load-bearing, frame and long span structures	MO1	Identify a range of common and emerging construction materials and technologies and explain how they are sourced and processed before being suitable for construction with emphasis on science, sustainability and environmental impact	MO2	Explain the process of building buildings making reference to the construction process, construction materials, order of assembly, work schedules	MO3	Understand the principles of measuring the performance of buildings with particular emphasis on environmental and passively designed structures; in order to evaluate basic energy costings	MO4	Appraise the physical condition of existing buildings by undertaking a detailed site and building analysis and survey report for a given structure	MO5	Apply skills to undertake a building survey of an existing structure in three-dimensions accurately using appropriate surveying equipment to set out and record the information logically and clearly	MO6	Design a small structural intervention that responds to the functional requirements of a defined brief and calculate the sizing of required components necessary to fulfil the safe load of that structure	MO7
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	Construct a structural element to scale and evaluate the structural limits of that element by controlled testing its capacity and potential imperfections; by recording this information technically discuss a refined solution	MO8
Contact Hours	Independent Study Hours:	
	Independent study/self-guided study	178
	Total Independent Study Hours:	178
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	80
	Practical sessions/work	42
	Total Scheduled Learning and Teaching Hours:	122
	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/ubllwh-30-1.html</p>	

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Architecture [Sep] [FT] [Frenchay] [3yrs] BSc (Hons) 2018-19

Building Services Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19

Architectural Technology and Design [Sep][SW][Frenchay][4yrs] BSc (Hons) 2018-19

Architectural Technology and Design [Sep][FT][Frenchay][3yrs] BSc (Hons) 2018-19

Building Services Engineering {Apprenticeship} [Sep][PT][Frenchay][5yrs] BEng (Hons) 2018-19

Building Services Engineering {Top-Up} [Sep][PT][SHAPE][1.5yrs] BEng (Hons) 2018-19

Building Services Engineering {Top-Up} [Sep][FT][SHAPE][1yr] BEng (Hons) 2018-19