



MODULE SPECIFICATION

Part 1: Information			
Module Title	Design of Structural Elements		
Module Code	UBGMS7-15-3	Level	Level 6
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Environmental Mgmt		
Contributes towards			
Module type:	Standard		
Pre-requisites	Structural Design and Soil Mechanics 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: The syllabus includes:</p> <p>Reinforced Concrete:</p> <p>Introduction to reinforced concrete within multi-storey buildings Preliminary design concepts for reinforced concrete Design of concrete slabs, beams, columns (short or slender), bases, staircases, walls, flat slabs, redistribution of moments, robustness Detailing aspects of concrete members</p> <p>Structural Steel Members:</p> <p>Types of loads, their effects and load paths. Properties of steel in relation to design. Design of steel members subject to tension, compression and bending. Design failures of steel elements.</p>

STUDENT AND ACADEMIC SERVICES

Teaching and Learning Methods: The module will be delivered by means of a series of lectures, tutorials and laboratory classes. The laboratory experiments will be used to reinforce principles, engender a scientific approach to practical investigative work, and give students an appreciation of the role of experimentation in structural design theory and research.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.

Contact Hours:

Student time will be allocated as follows:

Lectures: 48 hours

Tutorials: 12 hours

Summative assessment: 43 hours

Directed learning: 6 hrs

Self directed learning: 41 hours

Total student hours: 150 hours

Part 3: Assessment

The strategy has been chosen to ensure that fundamental engineering principles are assessed under controlled conditions, while a more open ended research based assignments are used to encourage wider engagement and reflection on this topic.

Summative assessment comprises a 2.5 hr examination for component A and two assignments for component B.

Coursework Assignments:

Two assignments of 2000 words each will cover structural design of reinforced concrete and steel structures respectively. Students are thoroughly assessed in learning outcomes 3-5 using these two assignments.

Examination:

The examination will cover the module syllabus as a whole, pulling together the individual learning outcomes 1-4. An open book format will be used to allow reference to appropriate codes and standards.

Formative assessment opportunities will be provided through four tutorial sessions and students are advised to attend all these tutorial sessions.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		25 %	Assignment 1 (concrete elements) 2000 words
Written Assignment - Component B		25 %	Assignment 2 (steel elements) 2000 words
Examination - Component A	✓	50 %	Examination (150 minutes)
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STUDENT AND ACADEMIC SERVICES

Written Assignment - Component B		25 %	Assignment 1 (concrete elements) 2000 words
Written Assignment - Component B		25 %	Assignment 2 (steel elements) 2000 words
Examination - Component A	✓	50 %	Examination (150 minutes)

Part 4: Teaching and Learning Methods																			
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2" style="text-align: center;">Module Learning Outcomes</th> </tr> </thead> <tbody> <tr> <td>MO1</td> <td>Design reinforced concrete elements for medium rise buildings</td> </tr> <tr> <td>MO2</td> <td>Design steel members in civil engineering structures</td> </tr> <tr> <td>MO3</td> <td>Demonstrate critical understanding, use and application of technical design standards and other information sources</td> </tr> <tr> <td>MO4</td> <td>Convey complex information in the form of structural design calculations</td> </tr> <tr> <td>MO5</td> <td>Produce detailed structural drawings based on design notes and sketches</td> </tr> </tbody> </table>	Module Learning Outcomes		MO1	Design reinforced concrete elements for medium rise buildings	MO2	Design steel members in civil engineering structures	MO3	Demonstrate critical understanding, use and application of technical design standards and other information sources	MO4	Convey complex information in the form of structural design calculations	MO5	Produce detailed structural drawings based on design notes and sketches						
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Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/index.html</p>																		