MODULE SPECIFICATION

Part 1: Information			
Module Title	Design of Structural Elements		
Module Code	UBGMS7-15-3	Level	Level 6
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Envrnmental Mgmt		
Module type:	Standard		
Pre-requisites	Structural Design and Soil Mechanics 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: See Learning Outcomes.

Outline Syllabus: The syllabus includes:

Reinforced Concrete:

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

Structural Steel Members:
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.

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)

Resit 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)

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	Reference
Design reinforced concrete elements for medium rise buildings	MO1
Design steel members in civil engineering structures	MO2
Demonstrate critical understanding, use and application of technical design standards and other information sources	MO3
Convey complex information in the form of structural design calculations	MO4
Produce detailed structural drawings based on design notes and sketches	MO5

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	41
Total Independent Study Hours:	41
Scheduled Learning and Teaching Hours:	
Face-to-face learning	109
Total Scheduled Learning and Teaching Hours:	109
Hours to be allocated	150
Allocated Hours	150

Reading List

The reading list for this module can be accessed via the following link:

https://uwe.rl.talis.com/index.html

Part 5: Contributes Towards

This module contributes towards the following programmes of study: