MODULE SPECIFICATION

Part 1: Information			
Module Title	Bridge Engineering		
Module Code	UBGMTR-15-M	Level	Level 7
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:	Project		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: The module aims to introduce students to the principles of bridge design, assessment and maintenance. Bridge types and elements, design and construction methods will be covered. Existing bridges will be considered in terms of inspection, testing, and maintenance techniques, particularly for concrete, steel and masonry bridges.

In addition to Learning Outcomes, students will also develop team working and field working skills.

Outline Syllabus: Indicative content:

Bridge types and elements.

Structural behaviour of concrete, steel and masonry bridges.

Design of concrete, steel and masonry bridges.

Assessment and loading specifications.

Inspection and maintenance.

Health and safety.

Innovations in bridge engineering.

Teaching and Learning Methods: The module will be delivered through lectures, tutorials, case studies and field visits. Bridges from around the world will be used as case studies and guest speakers will be invited from industry. Hands-on experience in inspection, testing and monitoring will be gained through field visits. Group work carried out during field visits will form the basis of the individual technical report.

Part 3: Assessment

The learning outcomes are addressed through lectures, tutorials and field visits to design, analyse and develop solutions to complex engineering problems. Summative assessment will comprise:

Component A: Individual Technical Report based on:

bridge design covered during lectures and tutorials; and

field work activities on inspection and damage assessment of existing bridges.

In the individual technical report students will submit a detailed bridge design for a new bridge and assessment /evaluation of an existing bridge of their choice based on gathered field data.

Requirements for resit coursework will be the same as the original submission but students can either improve their original submission or select a case study of their choice without the need for field work.

Formative feedback will be given during tutorial sessions and field work.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component A	✓	100 %	Technical report (4000 words equivalent)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component A	✓	100 %	Technical report (4000 words equivalent)

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**
Critically evaluate design concepts and demonstrate the ability to carry out appropriate design procedures for concrete, steel and masonry bridges	MO1
Critically evaluate failure modes and types of defects for concrete, steel and masonry bridge	MO2
Carry out data collection through field work	MO3
Critically evaluate inspection and test data and propose appropriate maintenance/strengthening methods	MO4
Demonstrate awareness of health and safety issues and how they may be addressed the during design, construction and maintenance stages	MO5

Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	114
	Total Independent Study Hours:	114
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning Fieldwork exercise	24 12
	Total Scheduled Learning and Teaching Hours:	36
	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: