



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Non Linear Structural Analysis		
Module Code	UBGMUA-15-M	Level	Level 7
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	Civil Engineering [Sep][FT][Frenchay][1yr] MSc 2018-19 Civil Engineering [Sep][PT][Frenchay][2yrs] MSc 2018-19		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Overview:</b> In this module, you will examine the analysis of non-linear behaviour of structures.</p> <p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> The module will cover:</p> <p>Geometric non-linearity, buckling and geometric stiffness.</p> <p>Equilibrium paths.</p> <p>P-delta effects.</p>

## STUDENT AND ACADEMIC SERVICES

Material non-linearity.

Inelastic buckling.

Numerical solutions for non-linear structural analysis.

Non-linear dynamic response of structures.

Capacity design principles for earthquake engineering.

**Teaching and Learning Methods:** See Assessment.

### Part 3: Assessment

Component A: Written examination (2 hours). Learning outcomes 1, 2, 3 and 5.

A written examination allows for the effective assessment of the individual student's ability to demonstrate the learning applications, as applied to technical problems. Formative support will be provided through the module via tutorial sheets and timetabled tutorial sessions.

Component B: Report (1000 words excluding appendices and references) Learning outcome 4.

A coursework submission to demonstrate the ability to use numerical modelling to analyse and design a structure under complex loading that includes earthquakes. The report must show ability to present the design outcomes in professional drawings and sketches.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		30 %	Coursework (1000 words report, excluding appendices and references).
Examination - Component A	✓	70 %	Examination (2 hours)
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Examination - Component A	✓	70 %	Examination (2 hours)

STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>																			
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Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p><a href="https://uwe.rl.talis.com/modules/ubgmua-15-m.html">https://uwe.rl.talis.com/modules/ubgmua-15-m.html</a></p>																		