



MODULE SPECIFICATION

Part 1: Information			
Module Title	Soil Mechanics		
Module Code	UBGMUQ-15-2	Level	Level 5
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 & Environmental Mgmt		
Module type:	Standard		
Pre-requisites	Mathematics for Civil and Environmental Engineering 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Overview: In this module you will be introduced to the fundamentals of soil mechanics including the properties and behaviour of soils.</p> <p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: You will cover: Soil as a three-phase material. Soil description, classification and properties. Laboratory and in situ tests to determine the properties of soils. The principle of horizontal and vertical effective stress. Strength of soils (Tresca and Mohr-Coulomb failure criteria). Compaction, compression and consolidation. Permeability of soils. Seepage and flow nets</p> <p>Teaching and Learning Methods: This module is taught through a combination of lectures, laboratory practicals and tutorials. The tutorial will involve the discussion of solutions to problems set as part of directed independent learning.</p>

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Part 3: Assessment			
<p>The learning outcomes require application of theory in the analysis of soil mechanics problems, this is assessed through an unseen written examination. More involved work of interpretation and analysis of test data will be assessed through a report based on practical work.</p> <p>Component A – Examination (2 hours). Learning outcomes 2 - 6. A written examination.</p> <p>Component B – Report (1000 words). Learning outcomes 1. A laboratory report documenting and interpreting individual laboratory practical work completed during term time; and analysing and interpreting data provided from other tests. The provided data can be generated uniquely for each student.</p> <p>Formative feedback will be provided in the laboratory sessions and through discussion of solutions to problems in the tutorial sessions.</p>			
First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		25 %	Report (1000 words)
Examination - Component A	✓	75 %	Examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		25 %	Report (1000 words)
Examination - Component A	✓	75 %	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>Interpret and analyse data from laboratory and in-situ soil tests to derive appropriate parameters for geotechnical design</td> <td>MO1</td> </tr> <tr> <td>Calculate vertical, horizontal and principal, total and effective stresses in soils</td> <td>MO2</td> </tr> <tr> <td>Calculate the drained and undrained strength of cohesive and cohesionless soils</td> <td>MO3</td> </tr> <tr> <td>Describe the mechanisms of compression, consolidation and compaction in soils</td> <td>MO4</td> </tr> <tr> <td>Calculate the compaction and consolidation of soils</td> <td>MO5</td> </tr> <tr> <td>Calculate seepage using flow nets</td> <td>MO6</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Interpret and analyse data from laboratory and in-situ soil tests to derive appropriate parameters for geotechnical design	MO1	Calculate vertical, horizontal and principal, total and effective stresses in soils	MO2	Calculate the drained and undrained strength of cohesive and cohesionless soils	MO3	Describe the mechanisms of compression, consolidation and compaction in soils	MO4	Calculate the compaction and consolidation of soils	MO5	Calculate seepage using flow nets	MO6
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	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ubgmuq-15-2.html</p>	

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Civil and Environmental Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19

Civil and Environmental Engineering [Sep][FT][Frenchay][4yrs] MEng 2018-19

Civil and Environmental Engineering [Sep][SW][Frenchay][5yrs] MEng 2018-19

Civil and Environmental Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19