



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Transport Engineering Design		
Module Code	UBGLX8-15-2	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	Engineering Graphics and Communication 2019-20, Engineering Principles for Civil Engineering 2019-20, Mathematics for Civil and Environmental Engineering 2019-20, Surveying 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Features:</b> Module Entry Requirements:</p> <p>For those not already on the BEng, or for others, A level mathematics or equivalent.</p> <p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> Sources of information for design including specifications and standards, and site specific parameters</p> <p>The principles of geometric design for transport infrastructure</p> <p>Horizontal and vertical curve design for highways and railways</p> <p>Highway pavement and permanent way construction</p> <p>Strength and characteristics of sub-grade</p> <p>Infrastructure for preventing water ingress</p>

## STUDENT AND ACADEMIC SERVICES

Materials characteristics and selection for transport infrastructure

**Teaching and Learning Methods:** The module guide will provide a programme of activities for students on a week by week basis. This will include, for example, the programme of tutorial work that they should be keeping abreast with, the planned lectures and class tutorials, and the activities that they should be engaging with in order to complete the assignments. It will also include any reading which they should be doing linked with class and assignment activities. Guest lecturers will be used as appropriate.

This module will be delivered in the normal way as part of a semester of teaching. This will involve classes comprising teaching and tutorial time as follows:

Activity (Hours)  
 Contact time (36 hours)  
 Independent Learning Time (74 hours)  
 Coursework Preparation (40 hours)  
 Total Workload (150 hours)

### Part 3: Assessment

Component A - Examination. Learning outcomes 1 to 7.

2 hour examination - open ended questions of an analytical nature with coverage of the full breadth of the syllabus.

Component B1 - Learning outcomes 1, 2 and 3.

Design problem relating to the adaptation of an existing alignment, or the introduction of a new connection in a network.

Component B2 - Learning outcomes 4, 5, 6 and 7.

Design problem relation to the selection of materials and the construction of a road or a railway.

First Sit Components	Final Assessment	Element weighting	Description
Set Exercise - Component B		15 %	Geometric design problem
Set Exercise - Component B		15 %	Construction design problem
Examination - Component A	✓	70 %	2 hour examination
Resit Components	Final Assessment	Element weighting	Description
Set Exercise - Component B		15 %	Geometric design problem
Set Exercise - Component B		15 %	Construction design problem
Examination - Component A	✓	70 %	2 hour examination

## STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>																	
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;"><b>Module Learning Outcomes</b></th> <th style="text-align: left;"><b>Reference</b></th> </tr> </thead> <tbody> <tr> <td>Understand the importance of and use of design speed in relation to geometric design of linear infrastructure</td> <td>MO1</td> </tr> <tr> <td>Understand the nature of vertical and horizontal curvature, and stopping and sighting distances in design</td> <td>MO2</td> </tr> <tr> <td>Undertake geometric design for highways and railways</td> <td>MO3</td> </tr> <tr> <td>Assess the strength and suitability of sub-grade for linear infrastructure</td> <td>MO4</td> </tr> <tr> <td>Understand the nature of materials used in linear infrastructure including sub bases, bituminous materials, pavement quality concrete, ballast, sleepers and rails</td> <td>MO5</td> </tr> <tr> <td>Select, with due regard to issues of sustainability, materials appropriate in the construction of linear infrastructure</td> <td>MO6</td> </tr> <tr> <td>Understand the importance of controlling water in the vicinity of linear infrastructure and methods to prevent or reduce its ingress</td> <td>MO7</td> </tr> </tbody> </table>	<b>Module Learning Outcomes</b>	<b>Reference</b>	Understand the importance of and use of design speed in relation to geometric design of linear infrastructure	MO1	Understand the nature of vertical and horizontal curvature, and stopping and sighting distances in design	MO2	Undertake geometric design for highways and railways	MO3	Assess the strength and suitability of sub-grade for linear infrastructure	MO4	Understand the nature of materials used in linear infrastructure including sub bases, bituminous materials, pavement quality concrete, ballast, sleepers and rails	MO5	Select, with due regard to issues of sustainability, materials appropriate in the construction of linear infrastructure	MO6	Understand the importance of controlling water in the vicinity of linear infrastructure and methods to prevent or reduce its ingress	MO7
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/modules/ubglx8-15-2.html">https://uwe.rl.talis.com/modules/ubglx8-15-2.html</a></p>																

<b>Part 5: Contributes Towards</b>	
<p>This module contributes towards the following programmes of study:</p> <p>Civil and Environmental Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2018-19</p> <p>Civil and Environmental Engineering [Sep][FT][Frenchay][4yrs] MEng 2018-19</p> <p>Civil and Environmental Engineering [Sep][SW][Frenchay][5yrs] MEng 2018-19</p> <p>Civil and Environmental Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2018-19</p>	