



MODULE SPECIFICATION

Part 1: Information			
Module Title	Hydraulic Modelling for Flood Risk Management		
Module Code	UBGMX9-15-3	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 & Environmental Mgmt		
Module type:	Standard		
Pre-requisites	Hydrology and Flood Risk Estimation 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Overview: This module will introduce you to the fundamentals of hydraulic modelling in river channel and floodplain settings for the purposes of flood risk management</p> <p>Educational Aims: See learning outcomes</p> <p>Outline Syllabus: The representation of fluid mechanics in hydraulic models and the fundamental principles of hydraulic modelling.</p> <p>Data requirements and sources for hydraulic models and the representation of structures and channel and floodplain features in these models.</p> <p>The process of building, calibrating and testing a hydraulic model.</p> <p>The identification of sources of uncertainty and the limitations of hydraulic modelling.</p> <p>The application of a hydraulic model to solve an engineering problem.</p> <p>This module will be taught through a series of lectures, supported by tutorial sessions where students will apply the theory learnt to engineering problems.</p> <p>Teaching and Learning Methods: See assessment strategy</p>

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Part 3: Assessment			
<p>Component A - Examination. Learning outcomes 1 and 4 Component A will be assessed via a 2-hour exam. The emphasis of the exam will be on testing theory and understanding of processes.</p> <p>Component B carries a higher weighting (60%) and will focus on practical skills and technical report writing.</p> <p>Component B – Portfolio (3000 words). Learning outcomes 2 - 4 The portfolio consists of a series of practical activities completed throughout the module and a synoptic report that tests the student's ability to undertake fundamental hydrological modelling and contextualise this in relation to solving flood risk management processes. The rationale for this approach is to keep the student engaged and represents an assessment for learning approach as they receive formative and summative feedback throughout the learning.</p>			
First Sit Components	Final Assessment	Element weighting	Description
Portfolio - Component B		60 %	Portfolio (3000 words)
Examination - Component A	✓	40 %	Examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Portfolio - Component B		60 %	Portfolio (3000 words)
Examination - Component A	✓	40 %	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>Explain the fundamental principles of hydraulic modelling, including data sources, the model building and testing process, and application of hydraulic models</td> <td>MO1</td> </tr> <tr> <td>Interpret the outputs of an integrated 1D-2D model and produce appropriate maps of flood hazard and extent</td> <td>MO2</td> </tr> <tr> <td>Use an integrated 1D-2D model to answer specific engineering questions</td> <td>MO3</td> </tr> <tr> <td>Identify the sources of uncertainty and limitations of a hydraulic model and design a process for improving the quality of simulations</td> <td>MO4</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Explain the fundamental principles of hydraulic modelling, including data sources, the model building and testing process, and application of hydraulic models	MO1	Interpret the outputs of an integrated 1D-2D model and produce appropriate maps of flood hazard and extent	MO2	Use an integrated 1D-2D model to answer specific engineering questions	MO3	Identify the sources of uncertainty and limitations of a hydraulic model and design a process for improving the quality of simulations	MO4
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Contact Hours	<table border="1"> <thead> <tr> <th colspan="2">Independent Study Hours:</th> </tr> </thead> <tbody> <tr> <td>Independent study/self-guided study</td> <td>102</td> </tr> <tr> <td>Total Independent Study Hours:</td> <td>102</td> </tr> <tr> <th colspan="2">Scheduled Learning and Teaching Hours:</th> </tr> </tbody> </table>	Independent Study Hours:		Independent study/self-guided study	102	Total Independent Study Hours:	102	Scheduled Learning and Teaching Hours:			
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	Face-to-face learning	48
	Total Scheduled Learning and Teaching Hours:	48
	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/ubgmx9-15-3.html</p>	

Part 5: Contributes Towards

This module contributes towards the following programmes of study: