



MODULE SPECIFICATION

Part 1: Information			
Module Title	Hydrology and Flood Risk Estimation		
Module Code	UBGMTQ-15-2	Level	Level 5
For implementation from	2020-21		
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	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Overview: This module will introduce you to the fundamentals of hydrology and flood risk estimation.</p> <p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: You will cover:</p> <p>Interpretation and assessment of each element of the hydrological cycle (precipitation, evaporation, interception, infiltration and soil moisture redistribution, groundwater, runoff).</p> <p>Streamflow analysis techniques (flow duration curves, flood frequency analysis, unit hydrographs).</p> <p>Modelling terminology, concepts and processes. Types of hydrological modelling.</p> <p>Flooding and flood estimation in gauged and ungauged catchments (simple methods, evolution of approaches, Flood Estimation Handbook statistical and rainfall-runoff methods, greenfield runoff estimation).</p> <p>Practical application of methods/models in engineering hydrology.</p>

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Teaching and Learning Methods: This module will be taught through a series of lectures, supported by tutorial sessions where students will apply the theory learnt to engineering problems.

Part 3: Assessment

Component A - Examination. Learning outcomes 1 - 3.

Component A will be assessed via an exam. The emphasis of the exam will be on testing theory and understanding of processes.

Component B carries a higher weighting (60%) and will focus on practical skills and technical writing.

Component B – Portfolio (3000 words). Learning outcomes 1, and 4 - 7. 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 analysis and contextualise this in relation to catchment scale 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.

First Sit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A		40 %	Online Examination
Portfolio - Component B	✓	60 %	Portfolio (3000 words)
Resit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A		40 %	Online Examination
Portfolio - Component B	✓	60 %	Portfolio (3000 words)

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
	Source, analyse and interpret meteorological and hydrological data	MO1
	Provide estimates of design rainfall	MO2
	Explain and quantify the processes involved in the hydrological cycle, particularly runoff generation and flooding	MO3
	Analyse streamflow data to determine flow characteristics (flow duration curves, unit hydrographs)	MO4
	Perform flood frequency analysis on recorded flow data	MO5
	Undertake flood estimation in ungauged catchments, including use of FEH methods and estimation of greenfield discharge	MO6
	Use hydrological techniques to solve engineering problems	MO7
Contact Hours	Independent Study Hours:	

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	Independent study/self-guided study	102
	Total Independent Study Hours:	102
	Scheduled Learning and Teaching Hours:	
	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/ubgmtq-15-2.html</p>	

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Civil and Environmental Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2019-20

Civil and Environmental Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2019-20

Civil and Environmental Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2018-19

Civil and Environmental Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2018-19