



MODULE SPECIFICATION

Part 1: Information			
Module Title	Engineering Hydrology		
Module Code	UBGLXH-15-1	Level	Level 4
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 [Jan][FT][Northshore][4yrs] MEng 2018-19		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Educational Aims: This module will be delivered through a number of lecture sessions aimed at establishing the discipline context, key definitions/concepts, and also at establishing a framework for learning.</p> <p>Outline Syllabus: The hydrological cycle (precipitation, evaporation, interception, infiltration and soil moisture redistribution, groundwater, runoff).</p> <p>Analysis and interpretation of each element of the hydrological cycle.</p> <p>Streamflow analysis techniques (flow duration curves, flood frequency analysis, unit hydrographs).</p> <p>Conceptual approaches to modelling (metric, parametric and mechanistic) and the modelling process (problem definition, model selection, data acquisition, parameter selection, calibration, sensitivity analysis).</p>

STUDENT AND ACADEMIC SERVICES

Flooding and the estimation of floods in ungauged catchments (simple methods, evolution of approaches, FEH methods, greenfield runoff estimation).

Practical application of a model in engineering hydrology.

Teaching and Learning Methods: The e-learning resources have been developed which guide the learner's independent learning. Through this mechanism learners build upon the fundamental concepts covered in the lectures and start applying new understanding through the tasks and activities provided in the e-learning. Formative feedback is provided to the group at subsequent contact sessions. Scheduled learning also includes a number of practical and field work sessions aimed at skills development.

On average students will receive 3 hours of contact time per week. This will be in a range of formats, including lectures, tutorial or computer-based sessions, formative feedback sessions and support via e-mail. The amount of time spent on activities in this module is shown below:

Activity Hours

Contact time (lectures/feedback/practical sessions) 38

Assimilation and development of knowledge 82

Coursework preparation 30

Total study time 150

Part 3: Assessment

Component A - Examination. Learning outcomes 1 - 3. Component A will be assessed via a 2-hour 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 report writing. Component B1 – Portfolio of Practical Work. Learning outcomes 1, and 4 - 7. A set of between 4 and 6 practical reports, based around weekly worksheets. These will be completed and handed in during the term and no more than a week after the relevant session, although the expectation is that the work is done in the practical session and could be handed in at the end of the session. The mark will be calculated on the basis of a selection of these submissions. The rationale for this is to keep the student engaged and submitting small, manageable pieces of work on a regular basis, and for which they will receive feedback. Formative feedback will be provided in subsequent sessions. Component B2 – Technical Report. Learning outcomes 1, and 4 - 7. Technical report which builds on the report writing and presentation skills developed in Element 1, but also tests their ability to undertake fundamental hydrological analysis and contextualise this in relation to catchment scale processes.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B	✓	42 %	Technical report (2500 words)
Portfolio - Component B		18 %	Portfolio of practical work
Examination - Component A		40 %	2 hour examination
Resit Components	Final Assessment	Element weighting	Description
Report - Component B	✓	42 %	Technical report (2500 words)
Portfolio - Component B		18 %	Portfolio of practical work
Examination - Component A		40 %	2 hour examination

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will be able to:	
	Module Learning Outcomes	
	MO1	Source, analyse and interpret meteorological and hydrological data.
	MO2	Provide estimates of design rainfall.
	MO3	Explain and quantify the processes involved in the hydrological cycle, particularly runoff generation and flooding.
	MO4	Analyse streamflow data to determine flow characteristics (flow duration curves, unit hydrographs).
	MO5	Perform flood frequency analysis on recorded flow data.
	MO6	Undertake flood estimation in ungauged catchments, including estimation of greenfield discharge.
MO7	Use hydrological techniques to solve engineering problems.	
Contact Hours	Contact Hours	
	Independent Study Hours:	
	Independent study/self-guided study	112
	Total Independent Study Hours:	112
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	38
	Total Scheduled Learning and Teaching Hours:	38
	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/index.html</p>	