



MODULE SPECIFICATION

Part 1: Information			
Module Title	Hydrogeology 2		
Module Code	UBGMKP-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	Hydrogeology 1 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Features: Module Entry Requirements: 60 credits at Level 2</p> <p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: The syllabus includes:</p> <p>Principal theories and concepts. Groundwater investigation techniques. Contaminant hydrogeology. Groundwater chemistry and water quality. Pollution remediation. Groundwater resources and environmental management. Groundwater models, recharge estimation.</p> <p>Teaching and Learning Methods: Scheduled learning on this module includes lectures, demonstrations and practical classes. Local fieldwork sessions will aid knowledge and skills development Independent learning includes hours engaged with essential reading, completion of practical work, assignment preparation and completion. These sessions constitute an average time as indicated below:</p>

STUDENT AND ACADEMIC SERVICES

Activity:

Contact time (lectures, field and laboratory sessions): 36 hours

Assimilation, development of knowledge and independent reading: 65 hours

Exam preparation: 24 hours

Coursework preparation: 25 hours

Total study time: 150 hours

Students will receive, on average, 3 hours' contact time per week. The principal theories and concepts will be introduced by short lectures but the main content of the course relates to field and practical work. Practical sessions, which will be introduced by a demonstration, will enable students to gain experience of modelling groundwater flow, investigating groundwater chemistry and resource estimation. Field skills in measurement and problem solving will be built in during local excursions. One-to-one support will be provided during practical and field sessions and via email.

Part 3: Assessment

Summative Assessment:

Component A – Examination (2 hours):

Written examination unseen questions.

This will enable students to demonstrate their knowledge and understanding of hydrogeological concepts and theories.

Students will have the opportunity to apply knowledge and understanding of numerical methods to analyse and solve problems and issues related to groundwater supply and pollution.

Students will also be able to demonstrate their engagement with academic literature.

Component B – Independent case study report:

Equivalent to 1000 words.

This will demonstrate students' ability to research and synthesise information on a real global issue in groundwater supply or pollution.

The report will indicate the students' ability to analyse or model the situation and make judgements and recommendations.

Formative work:

Formative work will be set weekly during practical sessions for students' self assessment and to help in producing the case study report. Students will receive preparation exercises for the summative assessment that may include a mock exam.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Independent case study report (1000 words)
Examination - Component A	✓	50 %	Written examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Independent case study report (1000 words)
Examination - Component A	✓	50 %	Written examination (2 hours)

STUDENT AND ACADEMIC SERVICES

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 style="text-align: left;">Module Learning Outcomes</th> <th style="text-align: left;">Reference</th> </tr> </thead> <tbody> <tr> <td>Critically evaluate and perform standard techniques to investigate groundwater resources</td> <td>MO1</td> </tr> <tr> <td>Model groundwater flow and recharge estimation using appropriate numerical methods</td> <td>MO2</td> </tr> <tr> <td>Appraise and implement analytical and graphical techniques to investigate pollution and contaminant transport in groundwater</td> <td>MO3</td> </tr> <tr> <td>Synthesise and apply hydrogeological knowledge to inform environmental management and remediation plans at a professional level</td> <td>MO4</td> </tr> <tr> <td>Demonstrate independent engagement with academic literature</td> <td>MO5</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Critically evaluate and perform standard techniques to investigate groundwater resources	MO1	Model groundwater flow and recharge estimation using appropriate numerical methods	MO2	Appraise and implement analytical and graphical techniques to investigate pollution and contaminant transport in groundwater	MO3	Synthesise and apply hydrogeological knowledge to inform environmental management and remediation plans at a professional level	MO4	Demonstrate independent engagement with academic literature	MO5				
Module Learning Outcomes	Reference																
Critically evaluate and perform standard techniques to investigate groundwater resources	MO1																
Model groundwater flow and recharge estimation using appropriate numerical methods	MO2																
Appraise and implement analytical and graphical techniques to investigate pollution and contaminant transport in groundwater	MO3																
Synthesise and apply hydrogeological knowledge to inform environmental management and remediation plans at a professional level	MO4																
Demonstrate independent engagement with academic literature	MO5																
Contact Hours	<table border="1"> <tbody> <tr> <td colspan="2">Independent Study Hours:</td> </tr> <tr> <td style="text-align: center;">Independent study/self-guided study</td> <td style="text-align: center;">114</td> </tr> <tr> <td style="text-align: center;">Total Independent Study Hours:</td> <td style="text-align: center;">114</td> </tr> <tr> <td colspan="2">Scheduled Learning and Teaching Hours:</td> </tr> <tr> <td style="text-align: center;">Face-to-face learning</td> <td style="text-align: center;">36</td> </tr> <tr> <td style="text-align: center;">Total Scheduled Learning and Teaching Hours:</td> <td style="text-align: center;">36</td> </tr> <tr> <td>Hours to be allocated</td> <td style="text-align: center;">150</td> </tr> <tr> <td>Allocated Hours</td> <td style="text-align: center;">150</td> </tr> </tbody> </table>	Independent Study Hours:		Independent study/self-guided study	114	Total Independent Study Hours:	114	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
Independent Study Hours:																	
Independent study/self-guided study	114																
Total Independent Study Hours:	114																
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/index.html</p>																

Part 5: Contributes Towards
This module contributes towards the following programmes of study: