



MODULE SPECIFICATION

Part 1: Information			
Module Title	Hydrology to Oceanography		
Module Code	USSKNA-15-2	Level	2
For implementation from	Sept 2017		
UWE Credit Rating	15 credits	ECTS Credit Rating	7.5 credits
Faculty	Health and Applied Sciences	Field	Applied Sciences
Department	Department of Applied Sciences		
Contributes towards	BSc Environmental Science MSci Environmental Science		
Module type:	Standard		
Pre-requisites	The Earth – USSJFB-30-1		
Excluded Combinations	none		
Co- requisites	none		
Module Entry requirements	n/a		

Part 2: Description
<p>This module will introduce you to the disciplines of hydrology and oceanography focusing on the underlying principles, sampling techniques and their application to aquatic environments.</p> <p>Hydrology and water catchment science. Examination of the water cycle, determining water budgets, water stores, transfers, the importance of the cryosphere. Water catchments, local and global catchment systems, fluvial systems. Catchment level science Understanding fresh, estuarine and marine waters.</p> <p>Contemporary aquatic sampling techniques Real-time, in-line sensors, sondes, CTD units, techniques for measuring nutrients, chlorophyll, tryptophan, DOM. POM, and DO. Temporal data and tidal cycles.</p> <p>Oceanography: Introduction to the ocean sciences, chemical oceanography, physical oceanography, biological oceanography and productivity up and down-welling regions. Understanding circulation, use of drogues residence times, Coriolis force, waves, the properties of seawater. The global oceans and changing climate, climate and oceans.</p> <p>Skills: Through this module students will gain practical field and laboratory experience of aquatic sampling techniques using industry recognised and contemporary methods and instrumentation.</p>
Part 3: Assessment

<p>The assessment for this module includes a defended presentation and a practical report (2000 words) based around the practical aspects of the module.</p> <p>The defended presentation is designed allow the student to research in depth an aspect of the course whilst understanding the broader concepts and context. Students will choose from a number of presentation titles that link to the topics covered in lectures. The defence will allow students to demonstrate their wider knowledge of the topic and how it relates to real world issues in hydrology or oceanography.</p> <p>The written report is designed to assess the student's ability to acquire and analyse an aquatic dataset, and interpret the results. This coursework assignment is also designed to assess the student's ability to present such information as a professional written report i.e. as an environmental consultant.</p> <p>Component A (Defended presentation) represents 50% of the module mark and Component B (Practical report) represents 50% of the module mark.</p>						
Identify final timetabled piece of assessment (component and element)		Component A1				
% weighting between components A and B (Standard modules only)		<table border="1"> <tr> <td>A:</td> <td>B:</td> </tr> <tr> <td>50%</td> <td>50%</td> </tr> </table>	A:	B:	50%	50%
A:	B:					
50%	50%					
First Sit						
Component A (controlled conditions) Description of each element		Element weighting (as % of component)				
1. Defended Presentation (15 minutes)		100%				
Component B Description of each element		Element weighting (as % of component)				
1. Practical Report (2000 word count)		100%				
Resit (further attendance at taught classes is not required)						
Component A (controlled conditions) Description of each element		Element weighting (as % of component)				
1. Defended Presentation (15 minutes)		100%				
Component B Description of each element		Element weighting (as % of component)				
1. Practical Report (2000 word count)		100%				
Part 4: Teaching and Learning Methods						
Learning Outcomes						

On successful completion of this module students will be able to:

- Understand and discuss the underlying principles of hydrological systems and ocean cycling (A1).
- Discuss how the water cycle is responding to a changing climate at local and global scales (A1).
- Design and undertake appropriate sampling of aquatic systems in the field and laboratory(B1).
- Collate and analyse aquatic data and discuss the outcomes in a professional report (B1).

A variety of learning approaches will be used to allow students to develop both field and laboratory techniques in addition to acquiring contemporary in-depth knowledge in the fields of hydrology and oceanography from the timetabled interactive sessions. Taught sessions at UWE will utilise TEL where possible, to support a pedagogy of active learning where the students will engage in facilitated activities such as lectorials, debates on contemporary issues, problem based learning etc.

Lectorials will provide context and discussion opportunities with peers and staff and will help guide student-centred learning. Practical sessions will provide opportunities to conduct industry recognised sampling and contemporary sampling and analysis to demonstrate theory discussed in lectorials. Tutorial sessions provide opportunities for data handling and interpretation, and discussions with academic staff. The module include field work where emphasis will be placed on undertaking and learning aquatic sampling techniques, including assessing typical water quality parameters. Team-working skills will be promoted through group work.

Support material such as videos, relevant texts, internet and electronic resources (e.g. 'TED talks' series), will be signposted to students or made available for use both in formal and informal sessions. Student learning will be supported through the University's E-Learning Environment, Blackboard.

Scheduled learning includes lectorials, tutorials, laboratory practical classes and fieldwork.

Independent learning includes hours engaged with essential reading, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below.

Key Information Sets Information (KIS)

Key Information Set - Module data				
<i>Number of credits for this module</i>				15
Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
150	36	114	0	150



Contact Hours

The table below indicates as a percentage the total assessment of the module which constitutes a;

Presentation: Oral presentation with defence
Coursework: Written practical report.

Total Assessment	Total assessment of the module:					
	Written exam assessment percentage					
	Coursework assessment percentage				50%	
	Practical exam assessment percentage				50%	
					100%	
Reading List	https://uwe.rl.talis.com/lists/96A52B1F-C836-32E2-FCC0-474137A1EA82.html?draft					
	<p>Abel, D. C. & McConnell, R.L. Environmental Oceanography, Jones and Bartlett Publishers</p> <p>Arnell, N. 2007. Hydrology and global environmental change. Prentice Hall Press.</p> <p>McLusky, D.S. & Elliot, M. 2004. The Estuarine Ecosystem. Oxford University Press.</p> <p>Miller, C. 2012. Biological Oceanography. Blackwell Scientific, Oxford.</p> <p>Pinet, P.R. 2014. An Invitation to Oceanography, Jones and Bartlett Publishers</p> <p>Robinson, M. & Ward, R.C. 2017. Hydrology: Principles and Processes. IWA Publishing, England.</p> <p>Segar, D.A. 2007. Introduction to Ocean Science. W.W. Norton & Company, London.</p>					

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First CAP Approval Date	31/5/2017			
Revision CAP Approval Date		Version	1	RIA 12112