



## **Module Specification**

### Hydrology to Oceanography

Version: 2023-24, v2.0, 06 Apr 2023

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## Part 1: Information

**Module title:** Hydrology to Oceanography

**Module code:** USSKNA-15-2

**Level:** Level 5

**For implementation from:** 2023-24

**UWE credit rating:** 15

**ECTS credit rating:** 7.5

**Faculty:** Faculty of Health & Applied Sciences

**Department:** HAS Dept of Applied Sciences

**Partner institutions:** None

**Field:** Applied Sciences

**Module type:** Module

**Pre-requisites:** The Earth 2023-24

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** Not applicable

**Features:** Not applicable

**Educational aims:** See learning outcomes.

**Outline syllabus:** 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.

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.

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.

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.

Skills:

Through this module students will gain practical field and laboratory experience of aquatic sampling techniques using industry recognised and contemporary methods and instrumentation.

### **Part 3: Teaching and learning methods**

**Teaching and learning methods:** 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 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.

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 content detailing field collection of data 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 (for example, '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 ELearning Environment, Blackboard.

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

Independent learning includes hours engaged with essential reading, assignment preparation and completion. These sessions constitute an average time per level.

**Module Learning outcomes:** On successful completion of this module students will achieve the following learning outcomes.

**MO1** Understand and discuss the underlying principles of hydrological systems and ocean cycling

**MO2** Discuss how the water cycle is responding to a changing climate at local and global scales

**MO3** Design and undertake appropriate sampling of aquatic systems in the field and laboratory

**MO4** Collate and analyse aquatic data and discuss the outcomes in a professional report

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 117 hours

Face-to-face learning = 33 hours

Total = 150

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/usskna-15-2.html) via the following link <https://uwe.rl.talis.com/modules/usskna-15-2.html>

## Part 4: Assessment

**Assessment strategy:** The assessment for this module includes a defended presentation and a practical report (2000 words) based around the practical aspects of the module.

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.

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, such as, as an environmental consultant.

Assessment Task 1 (Defended presentation) represents 50% of the module mark and Assessment Task 2 (Practical report) represents 50% of the module mark.

### Assessment tasks:

#### Presentation (First Sit)

Description: Defended presentation (15 minutes)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

**Report (First Sit)**

Description: Practical report (2000 word count)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

**Presentation (Resit)**

Description: Defended presentation (15 minutes)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

**Report (Resit)**

Description: Practical report (2000 word count)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Environmental Science [Frenchay] BSc (Hons) 2022-23

Environmental Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2022-23

Environmental Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2022-23

Environmental Science [Frenchay] MSci 2022-23

Environmental Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2021-22

Environmental Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2021-22