



## **Module Specification**

### Challenges, Data and Solutions

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## Part 1: Information

**Module title:** Challenges, Data and Solutions

**Module code:** UBGMR-15-0

**Level:** Level 3

**For implementation from:** 2023-24

**UWE credit rating:** 15

**ECTS credit rating:** 7.5

**Faculty:** Faculty of Environment & Technology

**Department:** FET Dept of Geography & Environmental Mgmt

**Partner institutions:** None

**Delivery locations:** Frenchay Campus, Global College of Engineering and Technology (GCET)

**Field:** Geography and Environmental Management

**Module type:** Module

**Pre-requisites:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

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

## Part 2: Description

**Overview:** Students will develop an understanding of the value of data and data analysis, and how they can be used in response to issues and problems in social and physical environmental contexts. The skills developed provide a foundation for further study in the environmental, social, technology and construction fields.

**Features:** Not applicable

**Educational aims:** Developing skills and competence in numeracy and problem-solving is key to the successful study of human and physical environments. This module will introduce students to practical and applied aspects of data gathering, analysis and communication. Students will gain a basic appreciation of the methods used to gain insights from a range of data. Students will be familiarised with a range of data gathering methods and gain an understanding of the importance of data protection and good governance. The module will help students to appreciate limitations and challenges in gathering and deciphering data. Students will engage with a range of data related methods, including:

Data collection

Data analysis

Data limitations

Data protection and good governance

Data visualisation and presentation

**Outline syllabus:** Indicative subject Content:

Mathematical and numerical literacy

Basic aspects of algebra and geometry

Using data to describe and model problems

Basic statistical analysis (e.g. descriptive statistics, correlation and regression analysis)

Data quality considerations applicable to both inputs and analytical products (e.g. accuracy, error, precision, validity, currency)

Skills:

Data Collection methods (e.g. laboratory, online, and field based collection)

Creation and manipulation of large datasets in computer spreadsheets

Data Presentation techniques

Effective communication & teamwork

Problem identification and solution planning

Defend decisions using datasets and analytical techniques

Data interpretation and evidence led reasoning

Problem identification and solution planning

Data visualisation and presentation techniques

Teamwork

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

**Teaching and learning methods:** To sustain student engagement, a mixed method approach will be utilised to teaching sessions.

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

**MO1** Apply a range of mathematical and statistical techniques to practical situations and interpret the results of investigation

**MO2** Perform numerical calculations to an appropriate level of accuracy

**MO3** Demonstrate understanding of a range of data collection techniques

**MO4** Apply and rationalise the choice of data for analysis in response to a set problem

**MO5** Communicate technical information using a variety of methods

**MO6** Appreciate ethical challenges associated with data collection, storage and analysis

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 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/ubgmnr-15-0.html) via the following link <https://uwe.rl.talis.com/modules/ubgmnr-15-0.html>

## Part 4: Assessment

### **Assessment strategy:** The Strategy

This assessment will involve students working in class and independently to respond to a specific problem using data and data analysis. Students will engage with the full investigative cycle – from problem formulation to problem solving and communication of results. Investigations will be formulated around real-world issues, such as carbon reduction, food security or energy management. Students' numeric skills development will also be assessed across the module, and, summatively at the end.

Formative feedback opportunities will be provided both formally and informally within the module tutorials. Standard faculty processes for managing student engagement will be implemented. The resit for this element will be an individual portfolio of evidence,

Plagiarism shall be discouraged by the requirement to select different data sets for the basis of their assessment.

### The Assessment

**In-Class-Test (Numeracy Test)** – Students will complete a series of in-class numeracy tests focussed on the development of numeric skills. Such regular assessment will allow students to benefit from feedback, as the assessments progress, and will foster confidence in their numeric skills. The final mark for this assessment will be based on a subset of the tests submitted.

**Portfolio of Evidence** – Students will carry out a data analysis project. They will be required to submit a portfolio of evidence where they will contextualize the problem they are addressing, outline and discuss the analyses they have performed, and consider how their results could inform decisions that are made in response to the stated problem. The pedagogic strategy of this assessment mainly responds to the importance of ensuring a student's ability to turn a practical investigation into a structured piece of work and develop their written and communication skills.

Resit Exam (of In Class Test): the in-class-test will be replaced by an examination that covers the same taught material.

Resit Portfolio - a similar brief to that described above, which may include an adjusted topic choice.

**Assessment components:**

**In-class test** (First Sit)

Description: Portfolio of Numeracy Tests

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO6

**Portfolio** (First Sit)

Description: Portfolio of Evidence (1500 words)

Weighting: 75 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO3, MO4, MO5, MO6

**In-class test** (Resit)

Description: Numeracy Test (1 hour)

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO6

**Portfolio** (Resit)

Description: Portfolio of Evidence (1500 words)

Weighting: 75 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO3, MO4, MO5, MO6

## **Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Environmental Management and Practice {Foundation} [GCET] BSc (Hons) 2023-24

Architectural Technology and Design {Foundation} [GCET] BSc (Hons) 2023-24

Urban and Regional Planning {Foundation} [GCET] BSc (Hons) 2023-24

Environmental Management and Practice {Foundation} [GCET] DipHE 2023-24

Urban and Regional Planning {Foundation} [GCET] DipHE 2023-24

Architectural Technology and Design {Foundation} [GCET] DipHE 2023-24