



## **Module Specification**

### **Data Management**

Version: 2023-24, v2.0, 20 Mar 2023

#### **Contents**

<b>Module Specification .....</b>	<b>1</b>
<b>Part 1: Information .....</b>	<b>2</b>
<b>Part 2: Description .....</b>	<b>2</b>
<b>Part 3: Teaching and learning methods .....</b>	<b>3</b>
<b>Part 4: Assessment.....</b>	<b>5</b>
<b>Part 5: Contributes towards .....</b>	<b>6</b>

## Part 1: Information

**Module title:** Data Management

**Module code:** UFCE8K-15-M

**Level:** Level 7

**For implementation from:** 2023-24

**UWE credit rating:** 15

**ECTS credit rating:** 7.5

**Faculty:** Faculty of Environment & Technology

**Department:** FET Dept of Computer Sci & Creative Tech

**Partner institutions:** None

**Delivery locations:** Not in use for Modules

**Field:** Computer Science and Creative Technologies

**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:** Not applicable

**Features:** Not applicable

**Educational aims:** See Learning Outcomes

**Outline syllabus:** Overview of data management. Methods of data organisation and access. From files to databases. Database architectures. Database Management

Systems (DBMS). Distributed databases and distributed DBMS.

Database design methods and methodology. Fact finding and requirements determination prior to design. Conceptual, logical, and physical design. Data analysis and design within systems analysis and design. Database design within a system development methodology.

Entity Modelling. Entities, attributes and relationships. E-R diagramming. UML notation for ER diagrams.

Relational modelling. Tables, relations, attributes, and normalisation. Relational algebra and calculus.

SQL: the Structured Query Language. Syntax and application.

Object-oriented approaches. Classes and instances; association and aggregation. Generalisation and inheritance. Object-relational DBMSs.

Data management in the organisational context. Database administration and management. Overview of database application areas. Introduction to, and uses and characteristics of: knowledge bases and knowledge management systems (KBS/KMS); online analytical processing (OLAP); data warehouses; data mining.

Developments in database systems. WWW as an emerging platform for database applications. XML and query languages for XML. Multimedia databases. Document management systems and digital libraries. Spatial and temporal databases. Active databases. Mobile databases

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

**Teaching and learning methods:** The module provides an overview of contemporary frameworks and practices in data management, with a central focus on developing skills in data modelling, small-scale database design and implementation, and SQL.

Lectures are used to present and highlight major concepts and approaches to data analysis and design and data management. Additional detail is provided in online notes, readings, and other indicated sources.

Practical exercises are emphasised in the tutorial sessions. The exercises are designed to exemplify and reinforce the theoretical content and develop students' practical skills through use of data management software. Data analysis and design methods are taught using case studies based on realistic industrial examples, and with reference to current practices and emerging standards.

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

**MO1** Understand and use the Relational Model of Data

**MO2** Understand, evaluate & apply a range of data query languages: SQL, XQUERY, XPATH & ETL tools.

**MO3** Design & develop a range of data models & schemas: XSD, ER, NoSQL(DOM, JSON document etc.).

**MO4** Understand enterprise data management methods & strategies including data cleansing, backup & recovery, security, replication, clustering, warehousing & multi-modal distributed cloud based data grids.

**MO5** Appreciate & critically reflect on the web of data and its value in use (transactional, social, scientific etc.) as well as its possible panoptic consequences (surveillance issues, privacy & ownership concerns etc.).

**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/index.html) via the following link <https://uwe.rl.talis.com/index.html>

## Part 4: Assessment

**Assessment strategy:** This module has no assessment strategy

### Assessment components:

#### **Examination (Online)** (First Sit)

Description: Online Examination

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

#### **Set Exercise** (First Sit)

Description: Database design exercise

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

#### **Examination (Online)** (Resit)

Description: Online Examination

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

#### **Set Exercise** (Resit)

Description: Database design exercise

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

## **Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Financial Technology [Frenchay] MSc 2023-24