**Module Handbook 2024/25**

**Module Name: Advanced Databases**

**Module Code: UFCFU3-15-3**

**Module Leader Name:** **Dr Trupti Padiya**



Contents

[Introduction 2](#_Toc171933073)

[1. Module team information 3](#_Toc171933074)

[2. Module specific information 3](#_Toc171933075)

[4. Assessment(s) 4](#_Toc171933076)

[5. Feedback 5](#_Toc171933077)

[6. Reading and resources list(s) 6](#_Toc171933078)

[7. Communication 6](#_Toc171933079)

[8. Advice and support 7](#_Toc171933080)

# Introduction

This module aims to support students in developing the skills to experiment with the design and implementation of SQL and NoSQL databases. The students will explore different technologies that support the storage, access and processing of organisational data at various levels. The systems that support the processing of data to allow for efficient processing with advanced algorithms will be explored. Students will be expected to be able to evaluate different options in supporting data systems that are used in complex real-life projects. Students will develop skills to assess the legal and ethical implications of designing, storing and managing access to increasing volumes of data particularly where such data is a mixture of sensitive and personal data with various levels of complexity that could lead to different levels of risk.

# Module team information

**Dr Trupti Padiya (Module leader)**

Trupti.Padiya@uwe.ac.uk

please email for an appointment

**Dr Elias Pimenidis**

Elias.Pimenidis@uwe.ac.uk

please email for an appointment

**Dr Sondess Missaoui**

Sondess.Missaoui@uwe.ac.uk

please email for an appointment

**Dr Paul Jackson**

Paul.Jackson@uwe.ac.uk

please email for an appointment

External examiners from other institutions are appointed to each module to act independently and work with the module team in the management of threshold academic standards. Information is available about the [external examiner appointed to this module](http://www2.uwe.ac.uk/services/Marketing/about-us/cas/Extnl_Exam_Allocation_to_Mods.pdf)

# Module specific information

The module specification for the Advanced Databases can be found here: [specification.asp (uwe.ac.uk)](https://info.uwe.ac.uk/modules/specification.asp?urn=2114039&file=UFCFU3-15-3_Advanced_Databases_2023.pdf)

The module will include the following topics: Relational databases; Object Relational Databases; Transaction processing; Complex queries; Query optimisation; NoSQL databases; Distributed and Scalable Databases, Horizontal/Vertical fragmentation; Temporal Databases; Data Warehousing; Data Marts; Big Data; GDPR; Access Management; Authentication, authorisation; Information risk management.

**Teaching and learning methods**

The module will be delivered in a hybrid mode throughout the term: 1) pre-recorded lectures/materials 2) Seminars – online, and 3) practicals – on campus. Pre-recorded lectures will help build the core knowledge, Seminars will help students interact with the staff for a great learning experience, and practicals will help develop and practise skills necessary for solving real-world problems.

Independent learning: In addition, students are expected to develop independent learning approaches through directed reading, study, and skills enhancement. Online forums and other support means such videos and external links will be made available via the VLE and the University's library systems.

**Module Learning Outcomes** On successful completion of this module students will be able to achieve the following learning outcomes:

**MO1** Design and Implement Prototypes of Database Systems that serve the needs of real-world problems with complex data, addressing the requirements efficiently and effectively.

**MO2** Critically evaluate database systems as to the risk and safety of data stored in them and the way such data is accessed and processed. In doing so, demonstrate a thorough knowledge of the ethical and legal challenges surrounding the storage of a wide range of data types.

The **module schedule** is provided as a separate sheet on the Blackboard in the module information tab.

4. Assessment(s)

**Assessment strategy:** The assessment will be formative and summative.

Formative will occur during the practical sessions where students will complete in-class exercises and receive verbal feedback. Formative feedback will also be provided to those students who will make their draft coursework available to tutors for review - such feedback will be verbal and/or written, (usually in the form of an email to the student). Summative assessment will be in the form of a portfolio of work. The portfolio will require a student to demonstrate their ability to work independently on designing and implementing a database that yields a solution to a practical problem. The student will also be required to include a discussion of the implications of their implementation in relation to a significant database issue such as security, legal imperatives etc. Referral work will be of the same type as per the main assessment.

There will be only one assessment component – **Portfolio**. The portfolio consists of an assessment weighting of **100% of module marks**. Details regarding the marking criteria will be provided in the assessment task specification. You should be able to access the Assessment Brief(s) on Blackboard via the assessment tab where you will find all the essential details e.g. submission requirements, marking criteria, feedback details and other relevant information.

**Assessment tasks:**

**Portfolio (First Sit)**

Description: Portfolio demonstrating the implementation of a database, an illustrative dataset and a discussion of some one or more selected issues relevant to the implementation.

Weighting: 100 %

Final assessment: Yes

Group work: No

**Portfolio (Resit)**

Description: Portfolio demonstrating the implementation of a database, an illustrative dataset and a discussion of some one or more selected issues relevant to the implementation.

Weighting: 100 %

Final assessment: Yes

Group work: No

**Module learning outcomes assessed by this portfolio task(s):**

1. Design and Implement Prototypes of Database Systems that serve the needs of real-world problems with complex data, addressing the requirements efficiently and effectively.

2. Critically evaluate database systems as to the risk and safety of data stored in them and the way such data is accessed and processed. In doing so, demonstrate a thorough knowledge of the ethical and legal challenges surrounding the storage of a wide range of data types.

# Feedback

The students will receive feedback in a variety of forms throughout the module, therefore it is important to attend timetabled sessions to ensure not to miss out on these opportunities.

Students will also receive feedback on assessed work which will enable them to understand how they have met the assessment criteria and identify areas for their further improvement.

MyUWE is used to communicate unconfirmed marks, provide cover sheets for assessments and to submit work. [Further information on all aspects of your myUWE portal](http://info.uwe.ac.uk/myUWE/guidance/default.asp) is available on the website.

# Reading and resources list(s)

Your module reading list can be accessed online, either directly through the link below or through the module’s Blackboard page.

The [short video](https://vimeo.com/240154631) available on the library’s website will introduce you to some of the key features of the online reading list system.

Reading list: [UFCFU3-15-3 Advanced Databases | UWE Bristol](https://rl.talis.com/3/uwe/lists/F9C90FD2-BA2B-8D9C-955E-33C26C0B8855.html?lang=en-GB&login=1)

# Communication

Throughout your time with us in this module, you will receive regular communications from your module team. The main communication channel used is Blackboard and your UWE email address. This should be checked regularly for module-specific information, new content and announcements. It is your responsibility to ensure that you read everything that you are sent and act upon it as appropriate.

Please see further information on all aspects of your myUWE portal.

In addition, the Faculty also has a Staff and Student Communications Policy that applies to all FET staff and students.

# Advice and support

There are a range of facilities and services available to go to for advice and support depending on what the issue is. Please remember - asking for help at the earliest possible stage will help you in the long run. Please contact [Information Point](http://www1.uwe.ac.uk/students/informationpoints.aspx) who may signpost you to other professional services such as;

[Library study skills support](https://www.uwe.ac.uk/study/study-support/study-skills/library-study-skills-support)

[Student Support Advisers](http://www1.uwe.ac.uk/students/academicadvice/studentadvisers.aspx)

[Disability Service](https://www.uwe.ac.uk/life/health-and-wellbeing/get-disability-support/about-our-disability-services)

[Health and Wellbeing Services](https://www.uwe.ac.uk/life/health-and-wellbeing)

[Money and Finance](https://www.uwe.ac.uk/life/money-and-finance)

[Immigration Advice Service](https://www.uwe.ac.uk/courses/international-study/visas/student-visa-support-service)

[FIKA daily mental wellbeing](https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.fika.community%2F&data=05%7C01%7CLisa.Connors%40uwe.ac.uk%7Ce2ad7826030a4b37babe08db9fcfe7d7%7C07ef1208413c4b5e9cdd64ef305754f0%7C0%7C0%7C638279487507569508%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=30n9AlQ3ogZaA%2FIXUiMyBDOx2oDUmie7RbjzLesqKhw%3D&reserved=0)