



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Database Design		
Module Code	UFCF7R-30-1	Level	Level 4
For implementation from	2019-20		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> Learners will cover a wide range of; conceptual data modelling (entity relationship models), relational theory and tools for designing a database and its interface, database design and normalization.</p> <p><b>Outline Syllabus:</b> In completion of this module learners should be able to:</p> <p>Take a scenario and design a database driven solution from the ground up.</p> <p>Understand and implement foreign keys and data relationships and dependencies within a functioning database.</p> <p>Explain and perform the systematic approach of decomposing tables to eliminate data redundancy(repetition) and undesirable characteristics like Insertion, Update and Deletion Anomalies – Database Normalisation.</p> <p>Understand how to create and use a Data Flow Diagram (DFD) to depict the flow of data throughout a given process or system.</p> <p>Explain an application/system and the relationships between its' various input and output using</p>

## STUDENT AND ACADEMIC SERVICES

an Entity Relationship Diagram (ERD).

Understand and explain the relationships, data ownership and constraints within a database in the form a Database Dictionary.

**Teaching and Learning Methods:** Introductory lectures are supported by seminars, case studies, visits and practical workshops. In addition, this module will be supported by interactive forums and learning tools. Students must have access to a suitable publicly accessible hosting platform and database server to be able to complete this module. 300 hours study time of which 108 hours will represent scheduled learning. Scheduled learning includes lectures, seminars, tutorials, demonstration, practical classes and workshops; external visits; supervised time in studio/workshop.

### Part 3: Assessment

This module is assessed by a combination of techniques: an examination and a practical portfolio.

In-Class Test (includes the following):

Design a complex database structure that utilizes data relationships, ownership and constraints

Optimise the proposed database via Normalisation to 1st, 2nd and 3rd normal form

Explain the flow of data using Data Flow Diagrams

Explain entity relationships using an Entity Relationship Diagram

Database Dictionary use to depict relations, ownership and constraints within the database

Practical Portfolio (includes the following):

Evidence of planning and design of a Database to support a business scenario

Implementation of a Database to support a business scenario

Deploying and test a completed Database in a live/enterprise environment

Opportunities for formative assessment exist for the assessment strategy used. Verbal feedback is given and all students will engage with personalised tutorials setting SMART targets as part of the programme design.

First Sit Components	Final Assessment	Element weighting	Description
Portfolio - Component B	✓	60 %	Portfolio - build and test a database solution
In-class test - Component A		40 %	In-Class Test (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Portfolio - Component B	✓	60 %	Portfolio - build and test a database solution
In-class test - Component A		40 %	In-Class Test (2 hours)

STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>																	
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;"><b>Module Learning Outcomes</b></th> <th style="text-align: left;"><b>Reference</b></th> </tr> </thead> <tbody> <tr> <td>Design a complex database that employs data relationships, constraints and ownership to suit a given real world scenario</td> <td>MO1</td> </tr> <tr> <td>Optimise a database to reduce redundancies and data handling anomalies via Normalization</td> <td>MO2</td> </tr> <tr> <td>Explain database relationships, ownership and constraints with a Database Dictionary</td> <td>MO3</td> </tr> <tr> <td>Plan, design, implement and test a Database solution to support a business scenario.</td> <td>MO4</td> </tr> <tr> <td>Create an ERD, documenting system relationships</td> <td>MO5</td> </tr> <tr> <td>Show an understanding of data flow and create Data Flow Diagrams</td> <td>MO6</td> </tr> <tr> <td>Write complex queries that interact with multiple tables</td> <td>MO7</td> </tr> </tbody> </table>	<b>Module Learning Outcomes</b>	<b>Reference</b>	Design a complex database that employs data relationships, constraints and ownership to suit a given real world scenario	MO1	Optimise a database to reduce redundancies and data handling anomalies via Normalization	MO2	Explain database relationships, ownership and constraints with a Database Dictionary	MO3	Plan, design, implement and test a Database solution to support a business scenario.	MO4	Create an ERD, documenting system relationships	MO5	Show an understanding of data flow and create Data Flow Diagrams	MO6	Write complex queries that interact with multiple tables	MO7
<b>Module Learning Outcomes</b>	<b>Reference</b>																
Design a complex database that employs data relationships, constraints and ownership to suit a given real world scenario	MO1																
Optimise a database to reduce redundancies and data handling anomalies via Normalization	MO2																
Explain database relationships, ownership and constraints with a Database Dictionary	MO3																
Plan, design, implement and test a Database solution to support a business scenario.	MO4																
Create an ERD, documenting system relationships	MO5																
Show an understanding of data flow and create Data Flow Diagrams	MO6																
Write complex queries that interact with multiple tables	MO7																
Contact Hours	<table border="1"> <tbody> <tr> <td colspan="2"><b>Independent Study Hours:</b></td> </tr> <tr> <td style="text-align: center;">Independent study/self-guided study</td> <td style="text-align: center;">192</td> </tr> <tr> <td style="text-align: center;"><b>Total Independent Study Hours:</b></td> <td style="text-align: center;">192</td> </tr> <tr> <td colspan="2"><b>Scheduled Learning and Teaching Hours:</b></td> </tr> <tr> <td style="text-align: center;">Face-to-face learning</td> <td style="text-align: center;">108</td> </tr> <tr> <td style="text-align: center;"><b>Total Scheduled Learning and Teaching Hours:</b></td> <td style="text-align: center;">108</td> </tr> <tr> <td><b>Hours to be allocated</b></td> <td style="text-align: center;">300</td> </tr> <tr> <td><b>Allocated Hours</b></td> <td style="text-align: center;">300</td> </tr> </tbody> </table>	<b>Independent Study Hours:</b>		Independent study/self-guided study	192	<b>Total Independent Study Hours:</b>	192	<b>Scheduled Learning and Teaching Hours:</b>		Face-to-face learning	108	<b>Total Scheduled Learning and Teaching Hours:</b>	108	<b>Hours to be allocated</b>	300	<b>Allocated Hours</b>	300
<b>Independent Study Hours:</b>																	
Independent study/self-guided study	192																
<b>Total Independent Study Hours:</b>	192																
<b>Scheduled Learning and Teaching Hours:</b>																	
Face-to-face learning	108																
<b>Total Scheduled Learning and Teaching Hours:</b>	108																
<b>Hours to be allocated</b>	300																
<b>Allocated Hours</b>	300																
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>																

<b>Part 5: Contributes Towards</b>	
This module contributes towards the following programmes of study:	