

MODULE DESCRIPTOR

Module Title

Database Systems

Reference	CM2101	Version	5
Created	February 2023	SCQF Level	SCQF 8
Approved	July 2016	SCQF Points	15
Amended	August 2023	ECTS Points	7.5

Aims of Module

To provide an understanding of core relational database design principles and how these are applied to the development of a relational database management system.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Adapt appropriate relational database systems at the conceptual and logical levels.
- 2 Use normalisation techniques to achieve more efficient relational database designs.
- 3 Write SQL code to define and manipulate relational data, including CRUD (Create, Read, Update, Delete) operations.
- 4 Use optimisation techniques in relevant situations within relational databases.

Indicative Module Content

The relational model: relations, keys, entity and referential integrity and constraints. Database design methods: Entity-Relationship modelling and normalisation techniques. SQL: data definition and manipulation languages. Database Performance: Denormalisation. Contextual Application: games, web, app, security and access control

Module Delivery

Key concepts are introduced and illustrated through lectures. The understanding of the student is tested and further enhanced through interactive sessions. In the laboratories the students will progress through a sequence of exercises to develop sufficient knowledge of a relational DBMS environment to enable them to complete the practical implementation of a relational database application.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	30	N/A
Non-Contact Hours	120	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Practical Exam	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	A practical assessment consisting of database design and implementation.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

All an overall minimum grade of D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
A	The student needs to achieve an A in C1.
B	The student needs to achieve a B in C1.
C	The student needs to achieve a C in C1.
D	The student needs to achieve a D in C1.
E	The student needs to achieve an E in C1.
F	The student needs to achieve an F in C1.
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None except for course entry requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 CONNOLLY, T and BEGG, C., 2015. Database Systems: A Practical Approach to Design, Implementation and Management. Pearsons.
- 2 CHURCHER, C., 2016. Beginning SQL Queries: From Novice to Professional. 2nd ed. Berkeley, CA: Apress L. P.
- 3 DEWSON, R., 2014. SQL Server Management Studio. ID: cdi_springer_books_10_1007_978_1_4842_0280_7_2. Berkeley, CA: Apress. pp. 25-42
- 4 ELMASRI, R. and NAVATHE, S., 2017. Fundamentals of Database Systems. Boston: Pearson.
- 5 GORDON, K., 2013. Principles of data management facilitating information sharing. 2nd ed. Swindon: BCS Learning & Development Limited.
- 6 MCQUILLAN, M., 2015. Introducing SQL Server. Berlin: Apress.