

Module Title Database Systems Keywords Database Architectures, Relational Algebra, DBMS Issues, Physical Modelling	Reference CM3017 SCQF Level SCQF 9 SCQF Points 15 ECTS Points 7.5 Created May 2002 Approved April 2005 Amended September 2012 Version No. 5
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This Version is No Longer Current

The latest version of this module is available [here](#)

Prerequisites for Module

CM2020 Introduction to Database Systems or CMM003 Relational Database Systems

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide the student with the ability to evaluate modern database architectures, and design and implement databases for large scale applications, taking into account security and transaction management issues in Database

Mode of Delivery

Key concepts are introduced and illustrated through lectures and directed reading. The understanding of students is tested and further enhanced through interactive tutorials. In the laboratories the student will progress through a sequence of exercises to develop sufficient knowledge of a relational DBMS to enable them to implement a relational DB application.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2,3,4
Component 2	5

Management Systems.

Learning Outcomes for Module

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

1. Describe and evaluate the architectures used in centralised and distributed database systems.
2. Describe, analyse and apply security and transaction management issues in Database Management Systems.
3. Describe and analyse database design requirements for advanced retrieval systems.
4. Describe and evaluate the physical database methodology for relational databases.
5. Implement and test a database application using relational DBMS.

Indicative Module Content

Database architectures: distributed architectures. DMBS issues: Transaction Management, Concurrency control, Recovery. Physical database implementations: linear, hashed and indexed file structures. Application: use of modern DBMS techniques to create advanced retrieval systems with constraints, views, stored procedures, triggers and cursors.

Indicative Student Workload

Component 2 - Coursework.

Component 1 - This is a closed book examination.

Indicative Bibliography

1. CONNOLLY, T. and BEGG, C. 2014 Database Systems - A Practical Approach to Design, Implementation and Management. 6th edition. Addison Wesley.
2. ELMASRI, R. and NAVATHE, S., 2015. Fundamentals of Database Systems. 7th Ed. Addison Wesley.
3. Introduction to Information Retrieval (online book) by Christopher D Manning, Prabhakar Raghavan and Hinrich Schutze. Cambridge University Press. 2008.
4. MISHRA, S. 2004. Mastering Oracle SQL. O'Reilly.
5. McDonald, C., Beck, C., Kallman, J., Knox, D., 2004. Mastering Oracle PL/SQL : Practical Solutions. OakPress

<i>Contact Hours</i>	Full Time
Assessment	10
Laboratories	24
Lectures/Tutorials	24

Directed Study

Coursework preparation	17
Directed Reading	20

Private Study

Private Study	55
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