GMIT
INSTITIÚID TEICNEOLAÍOCHTA NA GAILLIMHE-MAIGH EO
GALWAY-MAYO INSTITUTE OF TECHNOLOGY

INFO08007
Database Design and Development

Full Title	Database Design and Development		
Status	Uploaded to Banner	**Start Term**	2012
NFQ Level	08	**ECTS Credits**	05
Module Code	INFO08007	**Duration**	13 weeks - (13 Weeks)
Grading Mode	Numeric	**Department**	Comp Science & Applied Physics
Module Author	Owen Foley		
Co Authors	Sean Duignan, Deirdre ODonovan		

Module Description

This module is designed as an introduction to Database Design and Development techniques.

Learning Outcomes
On completion of this module the learner will/should be able to:

1. Design a relational database schema for a software application

2. Devise a set of relational tables and develop a relational database.

3. Query a relational database using SQL

4. Evaluate the use of non-relational data storage technologies

5. Prototype a non-relational database model

Indicative Syllabus

Relational Database Design (45%): Relational Database design - Primary Keys, Foreign Keys. Mapping ERD to a relational schema, data normalisation, relational integrity, keys, indexes; database transactions, ACID properties

SQL (35%): Schema definition: Create, Drop, Alter tables, views, sequences and indexes. Data manipulation in SQL: Insert, update and Delete tables and rows. SQL queries: basic queries, grouping, ordering, built-in SQL functions, joins, subqueries.

Non-relational storage (20%): Schema-less storage (no SQL); XML, Key Value and Document Store

Teaching and Learning Strategy

- Video Lectures.
- Problem based learning.
- Data Modelling Exercises
- Forum Discussions

Assessment Strategy

- Multiple Choice Quizzes
- Case Studies (Data Modelling Problems)
- Project

Repeat Assessment Strategies

- Multiple Choice Quizzes
- Case Studies (Data Modelling Problems)

- Project

Indicative Coursework and Continuous Assessment:		100 %		
Form	**Title**	**Percent**	**Week (Indicative)**	**Learning Outcomes**
Open Book Exam	Practical Evaluation Assessment	40 %	Week 8	1,2,3
Multiple Choice	Weekly Quizzes	20 %	OnGoing	1,2,3,4
Project	Modelling and Development	40 %	Week 13	1,2,3,4,5

Full Time Delivery Mode Average Weekly Workload:			**4.00 Hours**		
Type	**Description**	**Location**	**Hours**	**Frequency**	**Weekly Avg**
Lecture	lectures	Not Specified	2	Weekly	2.00
Practical	lab	Computer Laboratory	2	Weekly	2.00

Online Learning Delivery Mode Average Weekly Workload:			**4.00 Hours**		
Type	**Description**	**Location**	**Hours**	**Frequency**	**Weekly Avg**
Online Learning	Online Lectures and Activities	Not Specified	4	Weekly	4.00

Required Reading Book List
Connolly, T., (2014). *Database Systems: A Practical Approach to Design, Implementation, and Management* 6th Edition. Pearson. ISBN 0132943263 ISBN-13 9780132943260
Date, CJ., (2003). *An Introduction to Database Systems: United States Edition.* 8th Edition. Pearson. ISBN 0321197844 ISBN-13 9780321197849

Literary Resources
Modern Database Management, Jeffrey A. Hoffer, Mary B. Prescott, Fred R. McFadden, 8th Ed

Journal Resources
N/A

Online Resources
www.w3schools.com

Other Resources
MYSQL
XAMPP

Additional Information
None

Programme Membership
GA_KSOFG_L08 201700 Higher Diploma in Science in Software Development GA_BANAG_S08 201800 Certificate in Business Analytics