

<b>Module Title:</b>	Database Fundamentals
<b>Module Code:</b>	05C
<b>Level:</b>	4
<b>Credits:</b>	15
<b>Pre-Requisites:</b>	None

**Module Description:**

This module is designed to teach students the basic tasks involved in creating, querying and administering a database. Students learn how to design a relational database to fit the needs of a simple business scenario, and then create and populate that database.

Students learn how to use database server administration tools to manage a database.

Students learn how to use SQL (Structured Query Language) on the command line to query and update the data in a database.

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**Indicative Content:**

- Overview of the steps involved in a database design methodology.
- Creation of entity-relationship diagrams, in particular the Entity- Relationship model.
- Distinction of single and multi-valued facts, leading to a description and explanation of the first three steps of normalisation.
- Introduction to the structural, manipulative and integrity aspects of the relational model.
- Evaluating a design.
- Functions of a DBMS, including storage and retrieval, shared update, recovery.
- Use of SQL for data creation and maintenance.
- Appreciate of the differences between local and remote databases and database access.
- Experience with more than one database and administration interface, comparison thereof.
- Database backups, archiving data, user administration.
- Evaluate the security of the database installation in a case study.

## Module Specifications: Schools of Business & Management & Information Technology

### Learning and Teaching Methods:

The module will be delivered through a combination of lectures and workshops (3 hours per week).

### Specific Learning Resources:

Access to a database server and database administration interface.

### Bibliography

#### Highly Recommended Reading

Forta, B. (2013) Sams Teach Yourself SQL (2nd edition). s.l.:Pearson Education.

Hernandez, M. (2013) Database Design For Mere Mortals (3rd edition). Upper Saddle

River, New Jersey, USA: Addison Wesley.

#### Recommended Reading

Viescas, J. (2007) SQL Queries for Mere Mortals: A Hands-on Guide to Data Manipulation in SQL (2nd edition). Upper Saddle River, New Jersey, USA: Addison Wesley.

## Module Learning Outcomes

### Subject Specific Learning Outcomes

*On successful completion of this module you will be able to:*

LO	Interpret a problem scenario and produce and evaluate a suitable relational database design, making use of ER diagrams and normalised tables.
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LO	Explain and justify key database administration tasks.
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LO	Implement a database design, create and populate the tables, query the database using Structured Query Language, and evaluate the solution.
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Assessment Title or element	Weighting (%)
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Assignment 1: assessed workshops; report reflecting on the workshops, with documentary evidence of workshop activities (printscreens) in appendices (300 words) [mid semester]	20%
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Assignment 2: design, create and administer a database; write a report to document all steps and evaluate (800 words) [end semester]	80%
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