

Liverpool John Moores University

Title: DATA MODELLING
Status: Definitive
Code: **4003DACOMP** (125348)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Computer Science and Mathematics

| Team | Leader |
|---------------|--------|
| Carl Chalmers | Y |

Academic Level: FHEQ4
Credit Value: 10
Total Delivered Hours: 27.5
Total Learning Hours: 100
Private Study: 72.5

Delivery Options

Course typically offered: Semester 2

| Component | Contact Hours |
|-----------|---------------|
| Lecture | 16.5 |
| Practical | 11 |

Grading Basis: 40 %

Assessment Details

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|------------|-------------------|-------------------------|---------------|---------------|
| Technology | AS1 | Data Modelling Scenario | 100 | |

Aims

*To introduce the fundamentals of data manipulation and presentation.
To model and manipulate data using spreadsheet and database based applications.
To evaluate the advantages and disadvantages of spreadsheet and database based development models.*

Learning Outcomes

After completing the module the student should be able to:

- 1 Construct spreadsheet based applications from a given set of requirements.
- 2 Create logical and physical entity relationship models from a given set of requirements.
- 3 Construct database based applications from logical and physical entity relationship models.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Data Modelling Scenario 1 2 3

Outline Syllabus

Data Domains, Models & Abstraction

*SpreadSheet Modelling
Design, Manipulation & Reporting
Limitations*

*Logical Data Modelling
Entities
Relationships, Cardinality & Optionality*

*Physical Data Modelling
Tables
Attributes
Relationships*

*Functional Dependency & Normalisation
1NF - 2NF - 3NF*

*Database Modelling
Designers & Query-By-Example*

Learning Activities

Learning activities include lectures and tutorials where students are encouraged to ask questions / discuss scenarios and supported labs where students are encouraged to put theory gained through lectures and tutorials into practice. Directed reading against appropriate industry and research sources further reinforces learning.

This module will have online tutorials and labs.

Notes

This module delivers to students the ability to model and manipulate data in various differing scenarios. Student will be required to construct and manipulate data in spreadsheet based applications, then to model data using various data modelling techniques leading towards the construction and manipulation of database based applications.