

## Liverpool John Moores University

Title: Data Modelling  
Status: Definitive  
Code: **4503SEPA** (129455)  
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics  
Teaching School/Faculty: Beaconhouse IC Islamabad

Team	Leader
Glyn Hughes	Y

**Academic Level:** FHEQ4      **Credit Value:** 10      **Total Delivered Hours:** 22  
**Total Learning Hours:** 100      **Private Study:** 78

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Practical	11

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Artefacts	AS1	Data Modelling Scenario	100	

### Aims

*To introduce the fundamentals of manipulating and presenting data.*

*To manipulate and present data using spreadsheet and database based applications.*

*To evaluate the advantages and disadvantages of spreadsheet and database based applications.*

### 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 Dev.  
Manipulating & Presenting Data  
Pivot Tables & Charts  
Limitations*

*Logical Data Modelling  
Entities, Attributes & Keys  
Relationships (Cardinality & Optionality)*

*Physical Data Modelling  
Tables  
Columns  
Data Types  
Keys  
Nullability*

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

*Database Dev.  
Designers & Query-By-Example*

## **Learning Activities**

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

## **Notes**

The module imparts upon students the ability to model data in various differing scenarios. Students are initially required to manipulate and present data in spreadsheet based applications. The students are then required to solve problems using a data modelling methodology (e.g. entity relationship models / normalisation), ultimately leading towards the construction of database based applications.