

## Liverpool John Moores University

Title: Applied Data Science  
Status: Definitive  
Code: **6502SEPA** (129467)  
Version Start Date: 01-08-2021

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

Team	Leader
Glyn Hughes	Y
Carl Chalmers	

**Academic Level:** FHEQ6      **Credit Value:** 20      **Total Delivered Hours:** 44  
**Total Learning Hours:** 200      **Private Study:** 156

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	22

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Investigating Extract, Transform and Loading in Data Warehousing	40	
Technology	AS2	Developing Business Intelligence DashBoards	60	

### Aims

*To investigate the role and functionality of data warehouses in support of business intelligence.*

*To gain insights into the process of extract, transform & loading in the construction of data warehouses.*

*To study various platforms available for business intelligence reporting.  
To experience the development of service-oriented applications that support business intelligence dashboards.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Critically review methods for the construction of data warehouses in support of business intelligence
- 2 Apply appropriate design methods in the development of complex reporting solutions for business intelligence
- 3 Plan and implement a set of business intelligence dashboards to solve a business analysis problem

## **Learning Outcomes of Assessments**

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

Data Warehousing	1	
Business Intelligence Dashboard	2	3

## **Outline Syllabus**

*Introducing Business Intelligence & OLAP  
-Analytical Limitations of OLTP*

*Multi-Dimensional Modelling  
-Star & Snow Flake Schemas  
-Cubes  
-Aggregations  
-MOLAP, ROLAP & HOLAP*

*Analytical Extensions of SQL*

*Extracting, Transforming & Loading*

*Platforms for Reporting  
-Web Based Reporting Services  
-Supporting XML & JSON*

*Platforms for Business Intelligence Dashboards  
-Object Relationship Mapping  
-Web Services  
-Serializing & De-Serializing Objects  
-Manipulating & Presenting Data*

## **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 works with a growing area of database systems, that of the analytical database. The module begins by exploring the rapid growth of business intelligence data and the complex data models that are needed to support it. The module continues by exploring the platforms and processes that report such data through both web based and service oriented platforms.