Liverpool John Moores University

Title:	DATA SCIENCE AND ANALYTICS
Status:	Definitive
Code:	**5015DACOMP** (125359)
Version Start Date:	01-08-2021

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

Team	Leader
Fawaz Ghali	Y

Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	56.5
Total Learning Hours:	200	**Private Study:**	143.5		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	33
Practical	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Data Analytic/Science Exercise	60	
Exam	AS2	Examination	40	1.5

Aims

To contextualize the place of data science and the data analysis process in the organization
To introduce the hierarchy and uses of different analytical approaches

Learning Outcomes

After completing the module the student should be able to:

1   Distinguish between the component parts of enterprise information management systems and the place and purpose of data analytics and data science within those systems.
2   Identify and differentiate the component parts of the data analysis process.
3   Differentiate between the types of analytic approaches available and what each can produce

Learning Outcomes of Assessments

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

Data Analytic/Science Exercise   2
Examination   1   3

Outline Syllabus

Enterprise information management systems
Enterprise Information Management (EIM)
Enterprise Data Analytics (EDA)
Enterprise Data Science (EDS)
Enterprise Architecture (EA)
Enterprise solutions (ES)
Data Analysis Process
Data Analytics Types
 Descriptive Analytics – summarize "historical" data
Decision Analytics – distil data into manageable sets to optimise decision-making
Predictive Analytics – forecast future outcomes
Prescriptive Analytics – identify possible future actions and their effects
Detailed examples of descriptive and decision analytics in practice
The data science process
  Raw data collection
  Data cleansing
  Exploratory data analysis
  Machine learning, algorithms, statistical models
  Communicate, Visualization, Report findings
  Build data product
Cases studies in data analytics/science

Learning Activities

Lectures will be used to introduce topics, which will be reinforced through practical work in practical sessions. Learning will largely be based on practical exercises and problem solving activities.
This module will have online practical.

Notes

This module contextualises the roles of data science and data analytics in organisations to demonstrate their differing contributions to those organisations. In doing so, a hierarchy differing type of analytics are introduced and differentiated from data science in terms of purpose. This module lays the groundwork for the development of these areas in future modules, although descriptive and decision analytics are covered in detail here.