

Data Mining

Module Code:	COS7028-B
Academic Year:	2018-19
Credit Rating:	20
School:	Department of Computer Science
Subject Area:	Computer Science
FHEQ Level:	FHEQ Level 7 (Masters)

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	24
Tutorials	6
Laboratory	24
Directed Study	146

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Full Year (Sept - Aug)
BDA	University of Bradford / Semester 2 (Feb - May)

Module Aims

To develop a thorough understanding of the theory and practice of advanced data processing techniques. This will include description and critical evaluation of data analysis, data cleaning, data representation and data manipulation issues for mining, data processing, pattern or correlation exploration and data mining issues. Three types of relationships are addressed: classes, clusters, associations, as well as presenting data in a useful format (data visualization).

Outline Syllabus

Data Mining. Data, Information and Knowledge. Data Preparation (Statistical Evaluation, Data Selection, Data Cleaning, Transformation of Data). Data Mining Algorithms (Association, Classification, Clustering, Time Series Analysis, Text Mining). Data Mining Methodologies. Using Data Mining in the analysis of scientific and practical data.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 critically analyse and evaluate the theory and practice of data analysis options, data mining approaches and results.
- 2 Analyse data, critically evaluate possible solutions, choose, design and implement data mining algorithms, and apply the data mining techniques to specific case studies.
- 3 critically analyse, evaluate and present in writing case studies of data mining benchmarks or real world examples.

Learning, Teaching and Assessment Strategy

A combination of lectures, seminars, tutorials, lab sessions and directed study. Principles and theories will be introduced and explored in formal lectures, practised and discussed in tutorials, and applied and demonstrated in laboratory classes. Practical skills will be developed in tutorial and laboratory sessions. Oral feedback will be given during labs and tutorials. This will then be followed by further reading and practical work undertaken by the students with online support and feedback.

Coursework - overview, analysis, evaluation and presentation of data mining techniques and the results for a selected topic, will assess the application of practical skills to the knowledge base of the module and the wider learning outcomes expressed in the descriptor, addressing selection and implementation of suitable techniques such as supervised, unsupervised learning, association algorithms on a given data set and evaluation of the issues involved and results.

Supplementary coursework will involve repairing deficiencies in the original submissions.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Coursework	Report (4000 words or equivalent): on data mining techniques and the results for a	-4000 words	100%	Yes

selected topic.

Legacy Code (if applicable)

CM-1072D

Reading List

To view Reading List, please go to [rebus:list](#).