ROBERT GORDON UNIVERSITY ABERDEEN

MODULE DESCRIPTOR

Module Title

Data Mining

Reference	CM2712	Version	1
Created	February 2019	SCQF Level	SCQF 8
Approved	June 2019	SCQF Points	30
Amended		ECTS Points	15

Aims of Module

To provide students with an understanding of the main principles underlying Data Mining techniques and the ability to apply current Data Mining tools to datasets.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Discuss the advantages and disadvantages of applying a specific data mining technique to a given learning task.
2	Apply and adapt appropriate data mining techniques to a given problem.
3	Evaluate and interpret the results of data mining through the selection of an appropriate evaluation technique.
4	Demonstrate knowledge of current strengths, limitations and ethical use of data mining technology.

Indicative Module Content

Data mining concepts. Data mining methodology and life cycle (e.g., CRISP-DM). Data mining types (e.g., supervised and unsupervised). Data mining tasks (e.g., classification, clustering, regression). Data mining algorithms (e.g., Decision tree, random forest, SVM, KNN). Data mining applications. Ethical issues and potential bias in data mining.

Module Delivery

The module is delivered in Blended Learning mode using structured online learning materials/activities and directed study, facilitated by regular online tutor support. Workplace Mentor support and work-based learning activities will allow students to contextualise this learning to their own workplace. Face-to-face engagement occurs through annual induction sessions, employer work-site visits, and modular on-campus workshops.

Module Ref:	CM2712 v1

Indicative Student Workload		**Full Time**	**Part Time**
Contact Hours		30	N/A
Non-Contact Hours		30	N/A
Placement/Work-Based Learning Experience [Notional] Hours		240	N/A
TOTAL		300	N/A
Actual Placement hours for professional, statutory or regulatory body		240	

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	2, 3

Description: This coursework will consist of a data mining development exercise.

Component 2

Type:	Practical Exam	Weighting:	50%	Outcomes Assessed:	1, 4

Description: This practical exam will consist of a presentation on aspects of data mining within business systems.

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The calculation of the overall grade for this module is based on 50% weighting of C1 and 50% weighting of C2. An overall minimum grade of D is required to pass the module.

		Practical Exam:						
		A	**B**	**C**	**D**	**E**	**F**	**NS**
	A	A	A	B	B	C	E	
	B	A	B	B	C	C	E	
	C	B	B	C	C	D	E	
Coursework:	**D**	B	C	C	D	D	E	
	E	C	C	D	D	E	E	
	F	E	E	E	E	E	F	
	NS	Non-submission of work by published deadline or non-attendance for examination						

Module Requirements

Prerequisites for Module	None, in addition to course entry requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1 WITTEN, I.H. et al., 2017. Data mining: practical machine learning tools and techniques. 4th ed. Amsterdam, Netherlands: Morgan Kaufmann.

2 NETTLETON, D., 2014. Commercial data mining: processing, analysis and modeling for predictive analitycs projects. Amsterdam, Netherlands: Morgan Kaufmann.

3 MOHAMMED, J.Z. and WAGNER, M., 2014. Data mining and analysis: fundamental concepts and algorithms. Cambridge: Cambridge University Press.

4 ZAO, Y., 2013. R and data mining. Examples and case studies. Amsterdam, Netherlands: Academic Press.

5 PORCU, V., 2018. Python for data mining quick syntax reference. New York, NY: Apress.