1	**Course Name:**	Data Mining and Predictive Modelling	**Version Number:**	VE1
	Course Code:	CT119-3-2	**Effective Date:**	01 Mar 2023
	Course Classification:	Major (Core)		
2	**Synopsis:**	This module introduces the students to data mining methods and models, including association rules, clustering and precitive models. Students will be guided to work with datasets and apply their newly-acquired data mining expertise to solving real problems using large, real-world data sets. The students will be exposed to employing data mining tools in the market to enhance their technical knowledge.		
3	**Name(s) of Academic Staff:**	**1** **Dr.Preethi Subramanian**		
		2 Mr.Mafas Raheem		
		3		
4	**Semester and Year offered:**	**See Programme Specification** **(Module may be delivered on multiple programmes and therefore in different years/semesters)**		
5	**Credit Value:**	3		
6	**Pre-requisite/ co-requisite (if any):**	Probability & Statistical Modelling AQ077-3-2 or equivalent		

7 **Course Learning Outcomes (CLO)**

CLO1	Explain the basic concepts of data mining, modelling and analytical challenges of interpreting & presenting data (C2, PLO1)
CLO2	Apply data mining techniques to produce a solution (C3, PLO2)
CLO3	Perform analysis on the various data mining techniques for solving specific problems in real-world scenarios (A5, PLO9)

8 **Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment Methods**

Course Learning Outcomes	**Programme Learning Outcomes (PLO)**											**Teaching Methods**	**Assessment Methods**
	Knowledge and Understanding	Cognitive Skills	Practical Skills	Interpersonal Skills	Communication Skills	Digital Skills	Numeracy Skills	Leadership, autonomy and responsibility	Personal Skills	Entrepreneurial Skills	Ethics and professionalism		
	PLO 1	**PLO 2**	**PLO 3**	**PLO 4**	**PLO 5**	**PLO 6**	**PLO 7**	**PLO 8**	**PLO 9**	**PLO 10**	**PLO 11**		
CLO1	√											Lecture	Test
CLO2		√										Lecture, Tutorial	Assignment Implementation
CLO3									√			Tutorial, Case Study	Assignment Documentation
Mapping with MQF Cluster of Learning Outcomes	C1												
		C2											
									C4A				

Indicate the primary causal link between the CLO and PLO by ticking '√' in the appropriate box.

C1 = Knowledge & Understanding, C2 = Cognitive Skills, C3A = Practical Skills, C3B = Interpersonal Skills, C3C = Communication Skills, C3D = Digital Skills, C3E = Numeracy Skills, C3F = Leadership, Autonomy & Responsibility, C4A = Personal Skills, C4B = Entrepreneurial Skills, C5 = Ethics & Professionalism

9 **Transferable Skills (if applicable)**

(Skills learned in the course of study which can be useful and utilized in other settings)

1	Cognitive skills
2	Personal Skills
3	

Open-ended response (if any)

4	

10 **Distribution of Student Learning Time (SLT)**
Note: This SLT calculation is designed for home grown programme only.

	Course Content Outline and Subtopics	CLO*	Learning and Teaching Activities**								Total SLT
			Face-to-Face (F2F)							NF2F Independent Learning (Asynchronous)	
			Physical				Online/ Technology-mediated (Synchronous)				
			L	T	P	O	L	T	P	O	
1	Intro to data mining and methodologies	1	2							4	
2	Exploratory data analysis	1	2							4	
3	Data pre-processing	1	4							8	
4	Data mining methods: Supervised and unsupervised	1	4							8	
5	Case Study with datasets: Clustering and Segmentation analysis Association analysis	2	6	4				2		12	
6	Case Study with datasets: Predictive models	2	6	4				2		12	
7	Case Study discussion: Data mining methodologies	3					4	2		10	
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
										SUB-TOTAL SLT:	100

	Continous Assessement	%	Face-to-Face (F2F)		NF2F Independent Learning for Assessment (Asynchronous)	
			Physical	Online/ Technology-mediated (Synchronous)		
1	Test	40		2	8	
2						
3						
4						
5						
					SUB-TOTAL SLT:	10

	Final Assessement	%	Face-to-Face (F2F)		NF2F Independent Learning for Assessment (Asynchronous)	
			Physical	Online/ Technology-mediated (Synchronous)		
1	Assignment (Implementation-50%; Documentation 10%)	60			10	
2						
3						
4						
5						
					SUB-TOTAL SLT:	10

	SLT for Assessment:	20
	GRAND TOTAL SLT:	120
A	% SLT for F2F Physical Component: *[Total F2F Physical /(Total F2F Physical + Total F2F Online + Total Independent Learning) x 100)]*	26.67
B	% SLT for Online & Independent Learning Component: *[(Total F2F Online + Total Independent Learning) /(Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]*	73.33
C	% SLT for All Practical Component: *[% F2F Physical Practical + % F2F Online Practical]*	
C1	% SLT for F2F Physical Practical Component *[Total F2F Physical Practical /(Total F2F Physical + Total F2F Online + Total Independent Learning) x 100)]*	
C2	*% SLT for F2F Online Practical Component* *[Total F2F Online Practical / (Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]*	

Please tick (√) if this course is Industrial Training/ Clinical Placement/ Practicum using 50% of Effective Learning Time (ELT)

Note:

*** Indicate the CLO based on the CLO's numbering in Item 8**

**** For ODL programme: Courses with mandatory practical requiremnets imposed by the programme standards or any related standards can be exempted from complying to the minimum 80% ODL delivery rule in the SLT.**

11	**Identify special requirement or resources to deliver the course (e.g., software, nursery, computer lab, simulation room etc)**	SAS Enterprise miner or equivalent

12	**References (include required and further readings, and should be the most current)**	Kotu,V., Deshpande, B (2019). Data Science: Concepts and practice. Cambridge, MA : Morgan Kaufmann Publishers. ISBN: 9780128147627. Yang, X.S. (2019). Introduction to algorithms for data mining and machine learning. London, United Kingdom ; San Diego, CA, United States : Academic Press. ISBN: 9780128172179. Sarma, K.S. (2017). Predictive Modelling with SAS Enterprise Miner. SAS Institute. ISBN: 9781635260380
13	**Other additional information (if applicable)**	
Note: Number of PLO indicated is purely for illustration purposes only and the number is subjected to the curriculum design.		