

Module Code	DA3131	Semester 6	Module Title			Data Mining				
Credits	2	Hours/Week			C	E	O	Evaluation %		Prerequisites
GPA/NGPA	GPA	Lectures	Lab / Tutorials	Self-study				CA	WE	DA2111
		1	2	3.66				50	50	
Module Aim:	This course aims to provide both theoretical and practical knowledge on finding useful patterns for business applications in large databases.									
Learning Outcomes										
After completing this module, the students should be able to:										
LO-1	Describe the fundamental concepts involved in the process of discovering useful, possibly unexpected, patterns in large data sets									
LO-2	Explain the various stages involved in the data mining and information retrieval process									
LO-3	Apply various data mining tools to extract useful patterns and information from a data set									
Syllabus Outline										Learning Outcomes
1	Introduction [4 hrs] <i>Descriptive, Predictive and Prescriptive models</i>									LO-1
2	Data Preprocessing [5 hrs] <i>Missing value handling, Data cleaning, Data integration and transformation, Data reduction, Data discretization and concept hierarchy generation</i>									LO-2, LO-3
3	Mining Frequent Patterns, Associations, and Correlations [6 hrs] <i>Apriori algorithm: Finding frequent itemsets using candidate generation, Generating association rules from frequent itemsets, FP Growth Algorithm: Mining frequent itemsets without candidate generation</i>									LO-2, LO-3
4	Clustering [4 hrs] <i>Similarity measures, hierarchical clustering, non-hierarchical clustering, clustering based on statistical models</i>									LO-2, LO-3
5	Data mining applications [4 hrs] <i>Affinity, Churn</i>									LO-2, LO-3
6	Applications of ML platforms [4 hrs] <i>MS Azure ML, AWS ML</i>									LO-3
Assessments										
Assessment							Weight		Learning outcomes	
Continuous Assessments (CA)		In-class test - 01					25% [1.5 hrs]		LO-1, LO-2	
		In-class test - 02					25% [1.5 hrs]		LO-2, LO-3	
Written examination (WE)							50% [2 hrs]		LO-1, LO-2, LO-3	
References										