

Module code	SS-4314		
Module Title	Data Mining		
Degree/Diploma	Bachelor of Science (Computer Science)		
Type of Module	Major Option		
Modular Credits	4	Total student Workload	10 hours/week
		Contact hours	4 hours/week
Prerequisite	SS-2202 Algorithms and Data Structures SS-2203 Database Design SS-2207 Introduction to Artificial Intelligence and Soft Computing		
Anti-requisite	None		
Aims			
This module covers practical approaches of data mining with the application of machine learning techniques for analyzing data to determine unknown properties about the data. This module is a compulsory module for Soft Computing stream.			
Learning Outcomes			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	20%	<ul style="list-style-type: none"> - differentiate between data mining and machine learning - understand how data mining algorithms work - understand and apply performance improvement techniques including pre-processing of input and aggregating output from different methods - understand the different processes in handling data for extraction of useful information, including intelligent data analysis and modelling 	
Middle order :	60%	<ul style="list-style-type: none"> - use data mining tools such as Weka and R to develop data mining applications - select appropriate approaches to particular problems; analyse and evaluate the results of different techniques 	
Higher order:	20%	<ul style="list-style-type: none"> - design and implement data mining techniques, based on the requirements of the data (defining the problem) 	
Module Contents			
<ul style="list-style-type: none"> - Introduction to data mining and its applications; data mining technologies; - Machine learning and statistics; clustering and classification; - Evaluating data mining algorithms and validating results - Ensemble methods; feature extraction and selection; Weka and R 			
Assessment	Formative assessment	Interactive Quizzes and Feedback	
	Summative assessment	Examination: 50% Coursework: 50% <ul style="list-style-type: none"> - 2 class tests (20%) - 1 written assignment (15%) - 1 laboratory exercise (15%) 	