



Mehran University of Engineering and Technology, Jamshoro
Department of Software Engineering

ORIGINAL SUBMITTED SYLLABUS

Title of Subject	:	Data Mining Algorithms
Code	:	SE810
Discipline	:	Software Engineering
Effective	:	14PhD-IICT Batch and onwards
Pre-requisite	:	Database Management Systems, Statistical Methods
Assessment	:	10% Sessional 30% Mid Semester 60% Final Semester Examination
Credit Hours	:	03 + 0 Marks : 100
Minimum Contact Hours:		42

Specific Objectives of course:

- The course will enable students to understand fundamental concepts and working principle of algorithms of data mining. The goal of the course is to let the students understand the data mining techniques in order to apply such techniques in several applications domains. This course will allow students to discover knowledge from information repositories.

Course outline:

- **Introduction**
Data mining, motivating challenges, data mining tasks
- **Data**
Types of data, Data Quality, Issues related to data collection, Measures of similarity and dissimilarity
- **Classification**
Basic concepts, Decision Tree, Evaluating performance of classifier, Rule-based classifier, Bayesian classifier, Artificial Neural Network (ANN), Support Vector Machine (SVM)
- **Association Analysis**
Frequent itemset generation, Rule generation, Apriori algorithm, FP-growth algorithm, Evaluation of association rules
- **Cluster Analysis**
Clustering, K-means algorithm, Hierarchical algorithm, DBScan algorithm, Cluster Evaluation

BOOKS RECOMMENDED

- Pang-Ning, T., Steinbach, M., & Kumar, V. (Latest Edition). Introduction to data mining. In Library of Congress.
- Larose, D. T. (Latest Edition) Discovering knowledge in data: an introduction to data mining. Wiley.com.
- Han, Jiawei, Micheline Kamber, and Jian Pei. (Latest Edition). Data mining: concepts and techniques. Elsevier.
- Hand, Mannila, and Smyth. (Latest Edition). Principles of Data Mining. Cambridge, MA: MIT Press.

Approval:

Board of Studies:	Res.No.02.02	Dated:23-10-2017
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