KU6DSECSC 307 : DATAMING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSE	300-399	KU6DSECSC307	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
4	-	-	30	70	100	2hrs.

Course Description:

The course enables to preprocess and analyze data, to choose relevant models and algorithms for respective applications and to develop research interest towards advances in data mining

Course P**rerequisite: NIL**

Course Outcomes:

CO No.	Expected Outcome	Learning Domains
1	Understand different types of data to be mined	U
2	Categorize the scenario for applying different datamining techniques	U/A
3	Evaluate different models used for classification and Clustering	U/A
4	Focus towards research and innovation	E

**Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)*

Mapping of Course Outcomes to PSOs

PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	

CO 1	3						
CO 2	3		2	2			
CO 3	3	2		3			2
CO 4	3			3		3	3

COURSE CONTENTS

Contents for Classroom Transaction:

MODULE	UNIT	DESCRIPTION	HOURS
1	**MODULE TITLE**:: INTRODUCTION AND DATA PREPROCESSING		12
	1	Data Mining – Kinds of data to be mined – Kinds of patterns to be mined.	
	2	Technologies – Targeted Applications - Major Issues in Data Mining	
	3	Data Objects and Attribute Types – Measuring Data similarity and dissimilarity	
	4	Data Cleaning –Data Integration - Data Reduction – Data Transformation – Data Discretization	

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2	**MODULE TITLE:** MINING FREQUENT PATTERNS AND ADVANCED PATTERN MINING		**12**
	1	Basic Concepts – Frequent Itemset Mining Methods – Pattern Evaluation Methods	
	2	Pattern Mining in Multilevel, Multidimensional space	
	3	Constraint-Based Frequent Pattern Mining – Mining Compressed or Approximate Patterns	
	4	Pattern Exploration and Application.,	

3	**MODULE TITLE :** CLASSIFICATION TECHNIQUES		**12**
	1	Basic Concepts – Decision Tree Induction – Bayes Classification Methods – Rule-Based Classification —	
	2	Model Evaluation and Selection – Techniques to Improve Classification Accuracy	
	3	Bayesian Belief Networks – Classification by Backpropagation	
	4	Support Vector Machines	

4	**MODULE TITLE :** CLUSTERING TECHNIQUES		12
	1	Cluster Analysis – Partitioning Methods - Hierarchical Methods – Density-Based Methods	
	2	Outlier detection and applications Outliers and Outlier Analysis – Clustering-Based Approach –	
	3	Classification-Based Approach – Mining Complex Data Types	
	4	Data Mining Applications	

5	**Teacher Specific Module**	
	Teacher can supplement additional methodologies and evaluation metrics to appropriate topics.	12

Essential Readings:

9. JiaweiHan, Micheline Kamber and Jian Pie, Data Mining Concept and Techniques, Morgan and Kaufmann Publisher, Third Edition, 2012.
10. Arun K Pujari, Data Mining Techniques, Second Edition, Universities Press India Pvt. Ltd. 2010.

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Recommended Reading

1. Daniel T. Larose and Chantal D. Larose, Data Mining and Predictive Analytics, Wiley Series on Methods and Applications in Data Mining, Wiley Publications.
2. Ian H. Witten, Eibe Frank and Mark A. Hall, Data Mining: Practical Machine Learning Tools and Techniques, Morgan and Kaufmann Publisher, Third Edition, 2014.

Web Resources:

[1] https://data-flair.training/blogs/data-mining-tutorial/

[2]https://www.tutorialride.com/data-mining/data-mining-tutorial.htm **Assessment Rubrics:**

Evaluation Type		Marks
End Semester Evaluation		**70**
Continuous Evaluation		**30**
a)	Test Paper- 1	5
b)	Model Examination	10
c)	Assignment- 2 Numbers	10
d)	Seminar	5
e)	Book/ Article Review	
f)	Viva-Voce	
g)	Field Report	
Total		**100**

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