

Branch Name:	BCA (Bachelor of Computer Application)
Program Code:	CS101
Course Title :	DATA MINING-II
Course Code :	2CS1010604
Pre-requisite Course:	Concept of different data mining tasks

Course Objective (CO) :

This course is intended to make the students

- Identifying necessity of Data Mining and Data Warehousing .
- Familiar with the process of data analysis, identifying the problems, and choosing the relevant models and algorithms to apply.
- Develop skill in selecting the appropriate data mining algorithm for solving practical weka problems.
- Develop ability to design various algorithms based on data mining tools. Create further interest in research and design of new Data Mining techniques and concepts.

Teaching Scheme(Hours per week)				Evaluation Scheme (Marks)								
Lecture	Tutorial	Practical	Credit	Theory				Practical				Total
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	
2	-	2	3	28	70	12	30	12	30	08	20	150

Subject Contents			
Sr. No.	Topics	Total Hours	Weight (%)
1.	Data mining functionalities , Classification of data mining systems, Data mining task primitives, Data Preprocessing : Data cleaning, Data integration and transformation, Data reduction, Data discretization and Concept hierarchy .	6	20
2.	Association rule mining Association Rules: Problem Definition, Frequent item set generation, The APRIORI Principle, support and confidence measures, association rule generation; APRIORI algorithm. FP-Growth Algorithms, Compact Representation of Frequent item Set-Maximal Frequent item set, closed frequent item set.	6	20
3.	Classification and prediction Issues Regarding Classification and Prediction, Classification by Decision Tree Induction, Bayesian Classification, Classification by Back propagation, Classification Based on Concepts from Association Rule Mining, Other Classification Methods, Prediction, Classifier Accuracy.	6	20
4.	Explore tool "WEKA" in Data Mining: History of Weka, Features of Weka , Requirements and installation of Weka , Weka Data types and Format of Data, Types of Algorithms by Weka.	6	20
5.	Data Analytics basic skill : basic of data analytics - data collection - data clearing - data visualization - data analytics using excel as case study in any interesting topics	6	20

Course Learning Outcomes (CLO.):

At the end of this course, the student would be able

CLO.1 To understand the basics fundamental knowledge of Data Warehouse .

CLO.2 To understand large size data warehousing methods.

CLO.3 To implement various data mining search techniques in software development.

CLO.4 To apply various OLAP technologies which make student capable of handling huge information.

Mapping of CLO , PO And PSO

	PO.1	PO.2	PO.3	PO.4	PO.5	PO.6	PO.7	PO.8	PO.9	PO.10	PO.1 1	PO.1 2	PSO. 1	PSO. 2	PSO. 3
CLO.1	L		M	L		L	H	L		L	M				L
CLO.2	M	L			M		M		L			L	L		
CLO.3		M	M	L		H		L	M		L			M	
CLO.4	L			L	H		M	L		M		L			M

List of Text book :

1. IBM an Introduction to Building the Data Warehouse PHI Publication.
2. Data Warehousing Fundamentals – Paulraj Ponnaiah Wiley student Edition.

List of Text Reference book :

1. Data Mining: Concept and Techniques. - Jiawei Han & Micheline Kamber, Morgan Kaufmann Publishers, Elsevier, 2nd Edition, 2006.

E-Resources / Web Links:

- https://www.tutorialspoint.com/dwh/dwh_data_warehousing.html
- <https://www.w3resource.com/slides/data-warehousing.php>
- <https://www.slideshare.net/obieefans/data-warehouse-concepts-8164443>
- https://www.tutorialspoint.com/data_mining/
- www.wideskills.com/data-mining-tutorial/data-mining-architecture

List of Experiments:

Note : The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

Explore data mining tool “WEKA” .

1. Explore WEKA : installation of WEKA data mining toolkit.
2. Features of WEKA toolkit such as Explorer, Knowledge Flow interface, Experimenter, command-line interface.
3. Navigate the options available in the WEKA (ex. Select attributes panel, Preprocess panel, Classify panel, Cluster panel, Associate panel and Visualize panel)
4. Explore the available data sets in WEKA.
5. Load a data set (ex. Weather dataset, etc.)
6. **Load each dataset and observe the following:**
 - a. List the attribute names and they types
 - b. Number of records in each dataset
 - c. Identify the class attribute (if any)
 - d. Plot Histogram
 - e. Determine the number of records for each class.
 - f. Visualize the data in various dimensions