

DATA ANALYTICS LABORATORY**Course Code: KG23ACM313**

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0	0	3	1.5

B.Tech. III Year II Sem.

Course Objectives: The objectives of this course for the student are to:

1. Understand the data preprocessing concepts using real-time data
2. Explore the fundamental concepts of data analytics.
3. Learn the principles and methods of statistical analysis
4. Discover interesting patterns, analyze supervised and unsupervised models and estimate the accuracy of the algorithms.
5. Understand the various search methods and visualization techniques.

Course Outcomes: After completion of this course, the students will be able to:**CO1. Identify** how to perform data preprocessing **(K1)****CO2. Compare** linear regression and logistic regression **(K2)****CO3. Develop** the functionality of different classifiers **(K6)****CO4. Implement** visualization techniques using different graphs **(K3)****CO5. Analyze** the descriptive and predictive analytics for different types of data **(K4)****List of Experiments:**

1. Data Preprocessing
 - a. Handling missing values
 - b. Noise detection removal
 - c. Identifying data redundancy and elimination
2. Implement any one imputation model
3. Implement Linear Regression

4. Implement Logistic Regression
5. Implement Decision Tree Induction for classification
6. Implement Random Forest Classifier
7. Implement ARIMA on Time Series data
8. Object segmentation using hierarchical based methods
9. Perform Visualization techniques (types of Maps - Bar, Colum, Line, Scatter, 3D Cubes etc)
10. Perform Descriptive analytics on healthcare data
11. Perform Predictive analytics on Product Sales data
12. Apply Predictive analytics for Weather forecasting.

TEXT BOOKS:

1. Student's Handbook for Associate Analytics – II, III.
2. Data Mining Concepts and Techniques, Han, Kamber, 3rd Edition, Morgan Kaufmann Publishers.

REFERENCE BOOKS:

1. Introduction to Data Mining, Tan, Steinbach and Kumar, Addison Wesley, 2006.
2. Data Mining Analysis and Concepts, M. Zaki and W. Meira
3. Mining of Massive Datasets, Jure Leskovec Stanford Univ. Anand Rajaraman Millway Labs
Jeffrey D Ullman Stanford Univ.

CO-PO Mapping

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	H	2	H	2				2	2			H	H	2	H
CO2	H	H	H	H				H	H			H	H	2	2
CO3	H	2	H	2				2	2			2	H	2	H
CO4	H	H	H	2				2	2			2	H	2	2
CO5	H	2	H	2				2	2			L	L	2	H

HIGH=3,

MEDIUM=2,

LOW=1