DATA PREPARATION AND ANALYSIS

II Semester: **CSE**

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
BCSB13	Elective	3	0	0	3	30	70	100
Contact Classes: 45	Total Tutorials: Nil	Total Practical Classes: Nil				Total Classes: 45		

I. COURSE OVERVIEW:

This course provides students with the necessary skills to utilize appropriate data preparation techniques, enabling them to transform raw data into a standardized format. Students will learn the process of parsing and performing transformations on data, ensuring its consistency and compatibility for further analysis.

II. OBJECTIVES:

The students will try to learn:

I. The data for analysis and develop meaningful Data Visualizations

III. COURSE OUTCOMES:

After successful completion of the course, students should be able to:

CO 1	**Select** appropriate data preparation techniques to transform raw data into a standard format.	Understand
CO 2	**Apply** data cleaning methods on real-time data for usage of data in analytics.	Apply
CO 3	**Make use of** statistical methods for performing exploratory analysis.	Remember
CO 4	**Infer** complex data models with respect to time series and geographical data mining.	Create
CO 5	**Identify** the effective visualization techniques for data communication.	Remember

IV. SYLLABUS

UNIT-I	**DATA GATHERING AND PREPARATION**	**Classes: 09**
Data formats, parsing and transformation, Scalability and real-time issues		
UNIT-II	**DATA CLEANING**	**Classes: 09**
Consistency checking, Heterogeneous and missing data, Data Transformation and segmentation		
UNIT-III	**EXPLORATORY ANALYSIS**	**Classes: 09**
Descriptive and comparative statistics, Clustering and association, Hypothesis generation		
UNIT-IV	**VISUALIZATION -1**	**Classes: 09**
Designing visualizations, Time series, Geo located data, Correlations and connections		
UNIT-V	**VISUALIZATION -2**	**Classes: 09**
Hierarchies and networks, interactivity.		

Text Books:

1. Making sense of Data : A practical Guide to Exploratory Data Analysis and Data Mining, by Glenn J. Myatt

Web References:

1. http://www.sctie.iitkgp.ernet.in/
2. http://www.rkala.in/softcomputingvideos.php
3. http://www.sharbani.org/home2/soft-computing-1
4. http://www.myreaders.info/html/soft_computing.html

E-Text Books:

1. https://www.books.google.co.in/books?id=bVbj9nhvHd4C
2. https://www.books.google.co.in/books?id=GrZHPgAACAAJ&dq=1.+J.S.R.Jang,+C.T.Sun+and+E.Mizutani,+Neuro,+Fuzzy+and+Soft+Computing,+PHI,+2004,Pearson+Education.