



## Sub Committee for Curriculum Development

**Course Name:** Foundation of Data Warehousing and Data Mining

**(UG/PG):** UG

**Number of Credits:** 4

**Level:** 3

**Learning Objective(s):** The data warehousing part of module aims to give students a good overview of the ideas and techniques which are behind recent development in the data warehousing and online analytical processing (OLAP) fields, in terms of data models, query language, conceptual design methodologies and storage techniques. Data mining part of the model aims to motivate, define and characterize data mining process, Algorithms, Analysis; to motivate, define and characterize data mining applications.

After completion of this module the students will be able to:

Distinguish a data warehouse from an operational database system and appreciate the need of developing data warehouse for large operations

Describe the problems and processes involved in development of data warehouse

Explain the process of data mining and its importance

Understand different data mining techniques.

### Pedagogy:

Lectures

Class work discussion

Case studies

Presentations

**Pre-learning:** RDBMS

### Course Outline :

Sr. No	Topics	Hours
1	Data Warehousing Introduction and Background, What is Data Warehousing? Need for data warehousing, Role of DW, DW characteristics, Data Warehouse Architecture and Components, Data Marts, Application of DW	5
2	Data Warehouse Modelling Dimension Modeling, Data Warehouse Schemas, Cube Construction and Computation and Data Generalization, Dimension Model Creation, Case Studies, Difference between OLTP and OLAP technology, Materialized Views Constructions and Maintenance, Data Warehouse Indexes and their Performance	13

3	Extraction-Transform-Load (ETL) Introduction, ETL Process, ETL Tool Implementation with case Study	12
5	Data Mining What is data mining? KDD vs data mining, information extraction, characteristics, Issues and challenges in DM, Application of DM	5
6	Classification What is classification? Different classification methods and Algorithms, Prediction, accuracy and error measures, evaluating accuracy of a classifier , Model selection	12
7	Clustering and Association : Types of Clustering algorithm, Association Mining, Introduction to Outliers, Outlier analysis	8
8	Introduction to DM tool	5
	<b>Total</b>	<b>60</b>

### Books Recommended:

1. Data Warehousing by BPB publications
2. DATA WAREHOUSING, By SINHA,AMITESH
3. DATA WAREHOUSINGDESIGN AND DEVELOPMENT PERSPECTIVES, By KRISHNA,S.JAYA
4. DATA MINING: INTRODUCTORY AND ADVANCED TOPICS, By DUNHAM, MARGARET H.
5. DATA MINING: METHODS AND TECHNIQUE, By ALI ,ABM.SHAWKA
6. DATA MINING:CONCEPTS AND TECHNIQUES, By HAN,JIawei / KAMBER,MICHELINE
7. JOURNAL OF COMPUTER SCIENCE, G.G.BOOKS & PERIODICALS

### Suggested Evaluation Methods:

Assignments  
Class Test  
Mid Term Test  
End Term Test

### Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered
1.	M.Sc.	SICSR (Data Mining and Algorithms)

Name of Member	Tejaswini Apte	Priti Kulkarni			
Designation	Asst. Professor	Asst. Professor			
Org. / Inst.	SICSR	SICSR			
Signature					

Name of the Expert:

Signature:

Date: