



Sub Committee for Curriculum Development

Course Name: Foundation of Data Warehousing and Data Mining

(UG/PG): UG

Number of Credits: 04

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	No of Hrs
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	05

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	05
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	08
8	Introduction to DM tool	05

Books Recommended

- Data Warehousing by BPB publications
- DATA WAREHOUSING, By SINHA,AMITESH
- DATA WAREHOUSINGDESIGN AND DEVELOPMENT PERSPECTIVES, By KRISHNA,S.JAYA
- DATA MINING: INTRODUCTORY AND ADVANCED TOPICS, By DUNHAM, MARGARET H.
- DATA MINING: METHODS AND TECHNIQUE, By ALI ,ABM.SHAWKA
- DATA MINING:CONCEPTS AND TECHNIQUES, By HAN,JIawei / KAMBER,MICHELINE
- 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: