

COURSE CODE	COURSE TITLE	L	T	P	C
1152IT117	DATA WAREHOUSING AND MINING	3	0	0	3

Course Category:

~~Foundation (0) / Program Core (1) / Program Elective (2) / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry Higher Learning Institute Interaction (7).~~

a. Preamble :

This Course Is An Introduction To Data Warehousing , Business Analysis Data Mining , Association Rule Mining And Classification , Clustering And Applications And Trends In Data Mining , Types Of Data And Data Mining Application

b. Prerequisite Courses:

- Database Management System

c. Related Courses:

- Construct a lightweight prototype or simulation that supports the concept of data mining.

d. Course Educational Objectives :

Students undergoing this course are expected:

- Introduce the concept of data mining with in detail coverage of basic tasks, metrics, issues, and implication.
- Core topics like classification, clustering and association rules are exhaustively dealt with.
- Introduce the concept of data warehousing with special emphasis on architecture and design.

e. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	Implement Data warehouse architecture.	K3
CO2	OLAP tools and its functions.	K1
CO3	Various types of data models.	K2
CO4	Concept of Data mining concepts , functionalities, and classification of data mining systems.	K2
CO5	Concept of clustering and various methods of clustering	K2

f. **Correlation of COs with POs :**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M	M	M									
CO2			M	M								
CO3				M								
CO4	M											
CO5	M			M								

H- High; M-Medium; L-Low

g. **Course Content :**

UNIT I DATA WAREHOUSING

9

Data warehousing Components –Building a Data warehouse -- Mapping the Data Warehouse to a Multiprocessor Architecture – DBMS Schemas for Decision Support – Data Extraction, Cleanup, and Transformation Tools –Metadata.

UNIT II BUSINESS ANALYSIS

9

Reporting and Query tools and Applications – Tool Categories – The Need for Applications – Cognos Impromptu – Online Analytical Processing (OLAP) – Need – Multidimensional Data Model – OLAP Guidelines – Multidimensional versus Multirelational OLAP – Categories of Tools – OLAP Tools and the Internet.

UNIT III DATA MINING

9

Introduction – Data – Types of Data – Data Mining Functionalities – Interestingness of Patterns – Classification of Data Mining Systems – Data Mining Task Primitives – Integration of a Data Mining System with a Data Warehouse – Issues –Data Preprocessing.

UNIT IV ASSOCIATION RULE MINING AND CLASSIFICATION

9

Mining Frequent Patterns, Associations and Correlations – Mining Methods – Mining Various Kinds of Association Rules – Correlation Analysis – Constraint Based Association Mining – Classification and Prediction - Basic Concepts - Decision Tree

Induction - Bayesian Classification – Rule Based Classification – Classification by Backpropagation – Support Vector Machines – Associative Classification – Lazy Learners – Other Classification Methods – Prediction

UNIT V CLUSTERING AND APPLICATIONS AND TRENDS IN DATA MINING

9

Cluster Analysis - Types of Data – Categorization of Major Clustering Methods – Kmeans – Partitioning Methods – Hierarchical Methods - Density-Based Methods –Grid Based Methods – Model-Based Clustering Methods – Clustering High Dimensional Data - Constraint – Based Cluster Analysis – Outlier Analysis – Data Mining Application

TOTAL: 45

h. Learning Resources

i) TEXT BOOKS:

1. Alex Berson and Stephen J. Smith, “Data Warehousing, Data Mining & OLAP”, Tata McGraw – Hill Edition, Tenth Reprint 2007.
2. Jiawei Han and Micheline Kamber, “Data Mining Concepts and Techniques”, Second Edition, Elsevier, 2007.

ii) REFERENCES:

1. Pang-Ning Tan, Michael Steinbach and Vipin Kumar, “Introduction To Data Mining”, Person Education, 2007.
2. K.P. Soman, Shyam Diwakar and V. Ajay “, Insight into Data mining Theory and Practice”, Easter Economy Edition, Prentice Hall of India, 2006.
3. G. K. Gupta, “Introduction to Data Mining with Case Studies”, Easter Economy Edition, Prentice Hall of India, 2006.
4. Daniel T. Larose, “Data Mining Methods and Models”, Wile-Interscience, 2006.

iii) Online resources

- rgpv-engineering.blogspot.com/.../mca-501-data-warehousing-and-mini..
- 121.241.25.1/4.7.1%20-%20Data%20Warehousing%20Mining%20&%...
www.nyu.edu/classes/jcf/g22.3033.../DataWarehousingAndOLAP.pdf