

SYSTEMS (IT)
SEM III

I> Course Content

Semester	:	III-Core		
Title of the Subject / course	:	Database Management System & Data Warehousing		
Course Code	:	MMSSC 301 (RGCMS)		
Credits	:	4	Duration	: 40

Learning Objectives	
1	To understand the introduction, Meaning and Definition of Database, Database Environment
2	To understand the Data Models : The importance of data models, Basic building
3	Understand applications of Database Management System(DBMS) & RDBMS
4	To understand the Object-Relational Database Management System(ORDBMS)
5	Overview of Structured Query Language and application DBMS to business

Prerequisites if any	Basic understanding of Database Management System
Connections with Subjects in the current or Future courses	Will connect conceptual framework to Database Management System, RDBMS, Data Models, OODBMS, SQL and its application to business.

Module

Sr. No.	Content	Activity	Course outcomes
1	Introduction to Databases Introduction, Meaning and Definition of Database, Database Environment, Working of a Simple Centralized Database System, Traditional File Systems vs. Modern Database Management Systems, Properties of Database, Types of Database Users, Advantages of using DBMS	Lecture	MMSSC 301.1
2	Data Models: The importance of data models, Basic building blocks, Business rules, The evolution of data models Hierarchical, Network, Relational, Entity-Relationship model: entity and entity sets, relationship, constraints, E-R diagrams and issues.	Lecture & cases	MMSSC 301.2
3	Database Management System (DBMS) Basic concepts : data, information, metadata, definition of DBMS, Components, entities, attributes ,relationships, Data dependency Keys : Super key, Candidate key, Primary key, Alternate key, Foreign key Integrity Constraints: Entity Integrity, Referential Integrity ,DBMS three level(Logical, Conceptual, Physical) Advantages and disadvantages of DBMS, Database system environment and utilities	Lecture	MMSSC 301.3

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4	Distributed Databases: Introduction to Distributed DBMS Concepts, Client-Server Model, Data Fragmentation, Replication, and Allocation Techniques for Distributed Database Design	Lecture & cases	MMSSC 301.4
5	Relational Database Management System (RDBMS): Definition, Meaning, and Introduction, Merits and demerits, Relational Database design: features of good relational database design, atomic Domain and Normalization (1NF, 2NF, 3NF, BCNF).	Lecture & cases	MMSSC 301.4
6	Object-Relational Database Management System(ORDBMS): Introduction, Basics of Object Oriented Design (OOD), Characteristics- Advantages-Object oriented development- Objects and Object classes- Object Oriented data Model, Object oriented databases, Object Relational Database Management Systems	Lecture & Cases	MMSSC 301.4
7	Structured Query Language: SQL: Introduction, SQL, Multi table Queries, Nested Queries or Sub queries, Multiple Row Nested Queries, Data Manipulation Language, The Create Table Statement	Lecture & Cases	MMSSC 301.5
8	Security and integrity: Introduction, Security and Integrity Violations, Authorization, Granting of Privileges, Security Specification in SQL	Lecture & Cases	MMSSC 301.6
9	Data warehousing, Multidimensional Data Models, Data Warehouse Architecture, ROLAP, MOLAP, HOLAP, OLAP and OLTP	Lecture & Cases	MMSSC 301.6
10	Data Mining, Data Preprocessing, Data Marts, Cluster Analysis, Decision Making.	Lecture & Cases	MMSSC 301.6

II> Course Outcomes

Course Codes	Course Outcomes Students will be able to...	Cognition
MMSSC 301.1	CO1: Understand the concepts of Database, Database Environment.	Understand
MMSSC 301.2	CO2: Analyze the data models	Analyze
MMSSC 301.3	CO3: Concepts of DBMS, Three Levels of DBMS	Understand
MMSSC 301.4	CO4: Understand distributed Database Design , concepts of RDBMS and normalization, concepts of ORDBMS	Understand
MMSSC 301.5	CO5: Apply SQL in DBMS	Apply
MMSSC 301.6	CO6: Understand concepts of Security and Integrity In SQL and concepts of Data warehousing and Data mining	Understand

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Text books	
1	Rob, Coronel, "Database Systems", Seventh Edition, Cengage Learning.
2	Database management system by Navate
3	Database management by E.F Codd
4	Database Management Systems by Raghu Ramakrishnan
5	Introduction to Database Management Systems by Kahate

Reference books	
1	Database System and Concepts by A Silberschatz, H Korth, S Sudarshan, McGraw-Hill
2	Database Management Systems by P.S.Gill
3	Database System Concepts by Silberschatz
4	Database Management Systems by Bipin Desai

Assessment	
Internal	40%
Semester end	60%

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