

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

<b>Prerequisites if any</b>	Basic understanding of Database Management System
<b>Connections with Subjects in the current or Future courses</b>	Will connect conceptual framework to Database ManagementSystem, 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

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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
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

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**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

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%