



Sub Committee for Curriculum Development

Course Name: Introduction to database management system

(UG/PG): UG

Number of Credits: 2

Level: 2

Learning Objective(s):

The course is focused on understanding the importance of real life data and challenges in tackling the huge amount of data in business applications. This course will help the students to learn the basic concepts of data, databases and management of databases.

Pedagogy:

- Lectures
- Hands-on lab sessions

Pre-requisites: NIL

Course Outline

Sr. No.	Topic Name	No. Of Hrs.
01.	<u>Introduction to Database Systems - Data</u> : Types, Organization and Applications , Database : Definition, Evolution , Database Management : Structure, Limitations of traditional file processing systems, Advantages and disadvantages of DBMS, Users of DBMS	[05]
02.	Database architecture and Environment : Components of DBMS : functions, Architecture : Physical, Logical and View, Data languages : DDL & DML, Schemas, Life cycle of Database system development, Functions of DBMS	[04]
03.	Conceptual Database Modeling : Concepts & Applications, Types of Data Models : Hierarchical, Network, Relational, Object Oriented, Entity Relationship model : concepts of entity, entity sets, attributes, domains, Existence dependency, Candidate/Primary/ composite keys, Strong and Weak entities, Cardinality, E-R model : symbols, specialization, generalization, aggregation	[07]
04.	Relational Database Systems : Characteristics, Concepts : Relation, Attribute, Tuple, Domain, Relational Schemas, Relational constraints : Entity, Domain, Null, Key and Referential, Normalization : 1NF, 2NF, 3NF, BCNF and rules	[07]

05.	Database recovery : Need, Techniques : log based, check point, differed and immediate updates, shadowing, Catastrophic and non-catastrophic failures, Recovery in multi-database environments, Two phase commit protocol	[03]
06.	Database security : Type of security, legal and ethical issues, System policies, levels of security : Physical, Os, Network, DBMS, Privileges : Grant and Revoke	[02]
07.	Advances in Databases : Active databases : ECA model, Data warehousing, Data Mining, OLAP, OLTP	[02]
	Total	[30]

Reference Books:

- Database Management Systems by Ramkrishnan
- Fundamentals of Database Systems by Elmasari, Navathe
- Introduction to Database Systems by Date
- Database System Concepts by Korth and Silberschatz

Research Papers/Articles recommended for reading:-

Suggested Evaluation Methods:

- Assignments
- Hands on lab work
- Written examination
- Quizes

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member	Samaya Pillai	Sonal Khosla	Anuja		
Designation	Asst. Professor	Asst. Professor	Asst. Professor		
Org. / Inst.	SICSR	SICSR	SICSR		
Signature					

Name of the Expert:

Signature:

Date: