

TCS1001 DATABASE MODELLING AND DESIGN

Module 1

Introduction ER Model: Fundamental ER constructs, Advanced ER constructs, Object Oriented Data Modelling.

Module 2

ER Modelling in Logical Database Design: Introduction, Requirements analysis and ER Modelling, View Integration, Entity clustering, Relational database concepts, Overview of SQL.

Transformation of the ER Model to SQL: Transformation Rules & SQL constructs Transformation steps.

Module 3

Normalization: Fundamentals of Normalization, Design of Normalised Tables, Normalization of Candidate Tables derived from ER diagram, Determining the minimum set of 3NF tables, Fourth & Fifth normal forms.

Module 4

Access Methods: Sequential Access Methods, Random Access Methods, Secondary Indexes, Denormalization, Join Strategies.

Example of Relational DB design: Requirements specification, Logical Design, Physical Design.

Module 5

Distributed Data Allocation: Introduction, Distributed & Multi database Design, General Data Allocation problem, Data allocation strategies.

Module 6

Data Warehousing, OLAP and Data Mining: Overview of Data warehousing, Logical Design, Physical Design, OLAP, Data Mining.

Module 7

Advanced Database Technology: Architecture for advanced technology, Object-oriented & Object – Relational Database, Spatial and Geographic Databases, Multimedia Databases, Temporal Databases, Text Databases, Active Databases, Real – Time Databases.

Text Book :

T.J.Teorey - Database Modeling & Design, 3rd edition, Harcourt Asia Pte. Ltd., New Delhi, 2002

Reference Books :

1. A.Silberchatz et.al. – Database System Concepts 3rd Edn. McGraw Hill Inc., 1997.
2. R.Elmasri et.al. – Fundamentals of Database Systems, Addison Wesley, Indian Reprint, New Delhi, 2000.
3. R.Rama Krishnan – Database Management Systems, McGraw Hill International Edn., New York, 1998.