

CS09 L11 : ADVANCED DATABASE DESIGN

Teaching scheme

3 hours lecture and 1 hour tutorial per week

Credits: 4

Objectives

- To impart knowledge on the advancements in database management systems. This covers ideas on the latest methodologies such as object oriented, distributed and deductive database systems along with comparisons and some case studies.
- to enable the student to analyze, design and implement modern database systems, especially for a distributed environment..

Module I (11 hours)

Overview of relational database concept - object oriented database - overview of object oriented concepts - object definition language - object query languages - object database conceptual design – Object relational and extended relational systems.

Module II (13 hours)

Distributed database concepts - data fragmentation replication and allocation - types of distributed database system - query process - concurrency control for distributed database - overview of client - server architecture and its relationship to distributed database

Module III (13 hours)

Deductive database - introduction to deduction database prolog/datalog notation - interpretation of rules - basic inference mechanism for logic programs - datalog programs and their evaluation - deduction database systems - data Warehousing and data mining - database on World Wide Web - multimedia database - mobile database - geographic information system - digital libraries

Module IV (15 hours)

Oracle and microsoft access - basic structure of the oracle system - database structures and its manipulation in oracle - storage organization programming oracle applications - oracle tools - an overview of Microsoft access features and functionality of access - distributed databases in oracle

Text Books

1. Elmasri & Navathe, *Fundamentals of Database Systems*, Pearson Education, fourth edition.

Reference Books

1. Ramakrishnan R. & Gehrke J., *Database Management Systems*, McGraw Hill
2. O'neil P. & O'neil E., *Database Principles, Programming, And Performance*, Harcourt Asia (Morgan Kaufman)
3. Silberschatz, Korth H.F. & Sudarshan S., *Database System Concepts*, Tata McGraw Hill
4. Theory T.J., *Database Modelling And Design*, Harcourt Asia (Morgan Kaufman)

Internal Continuous Assessment (Maximum Marks-30)

- 60% - Tests (minimum 2)
- 30% - Assignments (minimum 2) such as home work, problem solving, group discussions, quiz, literature survey, seminar, term-project, software exercises, etc.
- 10% - Regularity in the class