

Course Title: Advanced Database Management
Systems Course Code: IT601

Module I: Query Processing

Basic concepts of query processing; converting SQL queries into Relational Algebra; Basic Algorithms for executing query operations; Query tree and query graph; Heuristic optimization of query tree, functional dependencies, normal forms.

Module II: Object Oriented and Extended Relational Database Technologies

Overview of Object-oriented database; OO Concepts; architecture of ORDBMS and OODBMS; OOD Modeling, ORD modeling, Specialization, Generalization, Aggregation and Associations, Object Query Language; Object Relational Concepts.

Module III: Parallel and Distributed Database

Introduction; Design of Parallel databases, Parallel Query Evaluation; Distributed databases principles; Architectures; design; implementation, Fragmentation; Transparencies in Distributed Databases; Transaction control in Distributed Database; Query Processing in Distributed Database

Module IV: Databases on the Web and Semi Structured Data

Web interfaces to the Web, Overview of XML; Structure of XML data, Document schema, Querying XML data; Storage of XML data, XML applications; The semi structured data model, Implementation issues, Indexes for text data.

Module V: Advance Transactions and Emerging trends

Multilevel Transactions, Long-lived transactions (Saga); Data warehousing and Data Mining; Active database; Spatial Database; Deductive database; Multimedia database.