

**CSE 880: ADVANCED DATABASE
SYSTEMS**
**Computer Science Department, Michigan
State University**
Spring 2008

Prerequisite: CSE 480

Instructor: Sakti Pramanik

Text Books:

There is no particular text books prescribed for this course. Following text books and several classical research papers will be used for lectures and references in this courses. Copies of these books and the research papers will be on reserve in the Engineering Library.

1. Advanced Database Systems by Carlo Zaniolo, Stefano Ceri, Christos Faloutsos, Richard Snodgras, V. Subrahmanian, and Roberto Zicari, Morgan Kaufmann Publishers.
2. Database Management Systems by Raghu Ramakrishnan, McGraw-Hill
3. Fundamentals of Database Systems by Elmasri and Navathe, Addison Wesley
4. Object-Oriented Database Systems- Concepts and Architectures by Elisa Bertino, Lorenzo Martino, Addison-Wesley
5. Object Database Standard: ODMG 2.0
6. Object-Relational DBMS by Michael Stonebreaker and Paul Brown, Morgan Kaufman
7. Spatial Databases (with applications to GIS) by Philippe Rigaux, et. al, Morgan Kaufmann
8. Distributed Databases: Principles of Distributed database Systems, by T Ozsu and P. Valduriez, Prentice Hall.

Lecture Topics:

1. Overview of Background Information (week-1, week-2):
 - (a) Data Models, Relational Databases, SQL
 - (b) Object-Oriented Databases, Query Languages
2. Object-relational Databases (week-3)
3. High Dimensional Indexing for Multi-media Databases (week-4, week-5)
4. Spatial Databases and Algorithms for Handling Spatial Data Structures (week-6, week-7)
5. Data Warehousing and Decision Support Systems (week-8)
6. Database Mining, Algorithmic Issues for Mining Large Databases (week-9, week-10)
7. Parallel and Distributed Databases (week-11, week-12)
8. Deductive Databases and Non-monotonic Reasoning (week-13, week-14)

Projects: Two-Persons Group Projects

Project Topics Include: Database Mining and Database Clustering, Indexing Audio-Video Databases, Streaming Databases, Web Databases.

Exam Dates:

To Be Announced.

Grading:

Homeworks:	20%
Projects:	30%
Midterm Exam:	25%
Final Exam:	25%

Midterm Exam: March 18, 2008

Office Hours:

Monday, Wednesday: 1:30-2:30 P.M. (Other times by appointments.)

Course web page:

<http://www.cse.msu.edu/pramanik/teaching/courses/cse880/08sp>