CSE 880: ADVANCED DATABASE SYSTEMS
Computer Science Department, Michigan State University
Fall 2010

Prerequisite: CSE 480
Instructor: Sakti Pramanik


Following other books and several classical research papers will be used for this course. Copies of these books and the research papers will be on reserve in the Engineering Library.

1. Fundamentals of Database Systems by Elmasri and Navathe, Addison Wesley
2. Object-Oriented Database Systems- Concepts and Architectures by Elisa Bertino, Lorenzo Martino, Addison-Wesley
3. Object Database Standard: ODMG 2.0
4. Object-Relational DBMS by Michael Stonebreaker and Paul Brown, Morgan Kaufman
5. Spatial Databases (with applications to GIS) by Philipe Rigaux, et. al, Morgan Kaufmann

Lecture Topics:
Order of covering the topics below may change.

1. Database Modeling, Query Languages and Constraint Databases
(a) Data Models, Relational Databases, SQL
(b) Temporal Databases
(c) Object-oriented Databases, Query Languages
(d) Object-Relational Databases
(e) Database Constraints and Active Databases

2. Spatial Databases and Algorithms for Handling Spatial Data Structures
4. Distributed and Federated Databases
5. Algorithmic Issues for Mining Large Databases, Clustering Large Databases
6. Web Databases
7. Deductive Databases and Non-monotonic Reasoning

Research Paper Presentation: Two-Persons Group
Topics Include: Database Mining and Database Clustering, Indexing Audio-Vedio Databases, Streaming Databases, Web Databases, Databases for Sen-sor Networks, Genome Sequence Databases, Spatial Databases.

Exam Dates:
Midterm Exam: October 25

Grading:

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<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homeworks</td>
<td>25%</td>
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<tr>
<td>Research Papers</td>
<td>15%</td>
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<tr>
<td>Midterm Exam</td>
<td>25%</td>
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<tr>
<td>Final Exam (take home)</td>
<td>35%</td>
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Office Hours: Monday: 1:30-2:30 P.M. (Other times by appointments.)

Course web page:
http://www.cse.msu.edu/~pramanik/teaching/courses/cse880/10f