Instructor: Deepak Venugopal

Time and Location: T, Th 5:30-6:55pm, FedEx Institute of Technology, 227

Email: dvngopal@memphis.edu

Office Hours: T, Th 4:00-5:00 PM, Dunn Hall 317

TA: Suhaib Khaled Saleh Al Rousan (slrousan@memphis.edu)

TA Office Hours: M, W 12:00-2:00 PM, DH 314 sec 3


Other References: Database Management Systems, Raghu Ramakrishnan and Johannes Gehrke
Database System Concepts, Avi Silberschatz, Henry F. Korth and S. Sudarshan

Pre-Requisites

Basic data structures, discrete mathematics and basics of algorithm analysis.

Learning Objectives

The aim of this course is to study, analyze and apply principles in the design of database systems. Both theoretical and practical aspects of database design will be emphasized.

Topics

1. Data Modeling and Manipulation: Relational Model, Relational Algebra, Relational Calculus, SQL, Entity-Relationship Model

2. Database Design Theory: Functional dependencies, Normal forms

3. Data storage and retrieval: File structure, Indexing, Query optimization

4. Transaction Processing and concurrency control: Serializability, locking protocols

5. Database Recovery and Security

6. Advanced Topics: Probabilistic Databases (If time permits)
Evaluation

1. Midterm Exam on October 8th (In Class): 25%
2. Final Exam, Dec 10, 5:30 - 7:30 PM: 35%
3. Homeworks (3 - 5): 15%
4. Project: 25% (Code and report due December 1, schedule for demo will be announced later)

Grading: $A > 90\%, A- \geq 85\%, B+ > 80\%, B \geq 75\%, B- > 65\%, C \geq 50\%$

Note: A modified curve may be used for determining the grades at the discretion of the instructor.

Policies

1. Both midterm and final exams are closed book and closed notes. One double-sided cheat sheet will be allowed.
2. No late homeworks or projects will be accepted unless well-documented reasons are presented.
3. All homeworks and projects must be individual work. Plagiarizing assignments or code sharing is not permitted. If plagiarism or cheating occurs, the student will receive a failing grade on the assignment and (at the instructors discretion) a failing grade in the course. The course instructor may also decide to forward the incident to the University Judicial Affairs Office for further disciplinary action. For further information on U of M code of student conduct and academic discipline procedures, please refer to: http://www.people.memphis.edu/ jaffairs/
4. Regular class attendance is mandatory. There is a strong correlation between regular attendance and obtaining a good grade. Instructor reserves the right to lower grades for lack of attendance. Students are responsible for any material and contents of missed lectures.
5. No early or late exams will be given unless under extreme situations.
6. Any grading errors in assignments should be notified within a week to the TA.