

## General Information

- **Instructor:** Amr El Abbadi
- Office: 3115 Engineering I
- Office hours: TR 11-12.
- **Teaching Assistants:** Supto Das

## Textbook

- Database Management Systems by Ramakrishnan and Gehrke McGraw-Hill 2003 3rd edition.

## Recommended readings

- Korth, Silberschatz and Sudarshan: Database System Concepts, McGraw-Hill.
- Elmasri and Navathe: Fundamentals of Database Systems, Benjamin/Cummings.
- Garcia-Molina, Ullman and Widom: Database Systems: The Complete Book, Prentice Hall.

## Course Description

This course covers the fundamental concepts, principles and techniques for the design and use of database management systems. The course work includes both homework exercises and a project. The topics include data models, including entity relationship model and the relational (record-based) model; relational query languages, including relational algebra and calculus, SQL and Query-By-Example; database integrity constraints; schema refinement and normal forms; as well as potentially other more advance and state-of-the-art topics.

## Prerequisites:

Computer Science 130A.

## Policies and Quizes

- The course grade will be based on the homework assignments, project, one mid-term and a final.
- The mid-term will take place in class on Feb 7.
- The final will take place in class on March 19, 8am.

- **Late turnins** will be penalized: 5 % of the points will be deducted for each working day the assignment was late with a maximum of 5 working days, after that the assignment is not accepted..
- Cheating will not be tolerated. This includes copying (parts of) answers or programs in homework, project or exam. Persons caught cheating will receive a grade of F in the course and a report will be filed to the Office of Student Services.
- Grades will be computed approximately as follows: homeworks and project: 50%, mid-term 20% and the final 30%.

## Course Outline

1. Introduction
2. The relational data model: general concepts
3. Relational algebra
4. Relational Calculus
5. SQL Queries
6. DDL, integrity constraints, updates, views in SQL
7. Query-By-Example
8. Conceptual database design: ER model
9. Conceptual database design : Normalization
10. Advanced Topics.