Instructor: Antonio Miranda
Hill 363
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Office hours: Monday   5:00pm - 6:00pm
                     Thursday   1:00pm - 2:00pm

Course Goals: This course will consider various languages for representing and accessing the different kinds of information, methodologies for using them, *theoretical principles* underlying them, and some fundamental algorithms. However, in contrast to standard database courses, we will be very skimpy on implementation aspects of DBMS, such as data storage, and transaction processing, which are covered in 198:437.

Text: *Database Management Systems* by R. Ramakrishnan and M. Gehrke, 3rd edition, McGraw-Hill.

Students are responsible for knowing all the material (a lot) that will be covered in class and is NOT in the book.

Other useful books:

- *A First Course in Databases* by J. Ullman and J. Widom

- *Database Systems: concepts, languages, and architectures* by P. Atzeni, S. Ceri, S. Praboschi, R. Torlone

- *Fundamentals of Database Systems* by R. Elmasri and S. Navathe

Class Policy:

- Attendance. Attendance is required. The instructor assumes that all students have knowledge of every announcement made during class time as well as all material covered in class.

- Exams. The exams will include material from:

    - lectures
    - homeworks
    - project
    - class participation

  The only acceptable reason for not attending an exam is a major (documented) medical emergency. NO make-ups will be given in any other case.

  A list of specific topics will be posted before each exam, to help you prepare.

- Class participation. During most lectures you will be given a short list of exercises to be completed by working in teams (of at most 3 students each). These exercises will be counted as *class participation*. There is NO make-up for class participation but the lowest one will be dropped.

- Homeworks. Homeworks will be posted on Sakai. Late homeworks (less than 3 days) will still be accepted but with a 30% penalty even if they are 1 minute late. After 3 days late homeworks will **NOT** be accepted. Partially completed homeworks will receive partial credit.

- Project. The programming project will be graded principally on functionality. In order to pass the course, a working programming project must be completed and handed in. Individual contributions to the project will be measured and taken into account, the instructor may request an oral examination to further evaluate a student's understanding of the material involved and the way in which the program works. The only communication between teams should concern very general topics such as how to log in, how to install software and the like. Reusing software written by others or for other courses/projects is prohibited, unless approved by the instructor.

- Regrading. To report possible grading errors, attach a page describing the alleged error to the corresponding exam, homework, or project and submit it to the instructor or TA no later than one week after the date when the test, homework or project was returned graded. An answer to a grade appeal may not be available until the end of the semester, so make copies of the materials given back for review.

- Grading.

Homeworks	20%
Programming Projects	25%
2 Midterm exams	30%
Final exam	15%
Class participation	10%

  The grade assigned as final grade cannot be changed, even by doing additional work. In order to be fair to all students, any option to improve grades (if any) will be given to every student, NOT just to one particular student.

Course Outline:

Topic
Overview of Database Systems
Database Design (ER)
Relational Model
From ER to Rel Model
Relational Algebra
Normalization
SQL
Transaction Management
Datalog and Object Oriented Databases
Semistructured data (XML, JSON, AJAX, etc.)

Adjustments to this schedule, as well as to the order of the topics will be made as necessary.

Important Dates:

Exam 1	2/25/2019
Exam 2	4/1/2019
Final	According to University Schedule