CSNetwork Services
CALIFORNIA STATE UNIVERSITY LOS ANGELES

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CS5540 Graduate Topics in Computer Science: Advanced Database Systems **(Spring 2020)**

Time and Location:

M: 6:00 -- 8:45pm FA 223

Instructor:

Dr. Huiping Guo
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323-343-6637
ET A318

Office hours: M/Tu: 10:00 -- 11:00am

Course Description:

This is an advanced course in the area of database, which focuses on implementation details of a database management system.Topics to be covered include file organization,indexing, query evaluation, query optimization, concurrency control, crash recovery and some other advanced topics such as database security etc.

Pre-requisites:

CS422 (Quarter System)
CS4222(Semester System)

Required textbook:

- Fundamentals of Database Systems, 7th Edition, by Ramez Elmasri and Shamkant B. Navathe

Course goals:

At the end of the course, students are able to have a deep understanding of how a DBMS stores data, evaluates and optimizes queries, and guarantees the ACID properties.

Course topics:

- Introduction to DBMS
- Data storage
- Tree indexes
- Hash indexes
- Query evaluation
- External sorting
- Query optimization
- Introduction to transaction management
- Concurrency control
- Crash recovery

Class schedule:

Week	Date	Topics	Assignments
1			
2	01/27	Lec01: Intro	
3	02/03	Lec02: Overview of storage and indexing	homework 1
4	02/10	Lec02 cont. Lec3: disks	
5	02/17	Review	
6	02/24	Midterm 1	
7	03/02	Lec4: files and ISAM	homework 2
8	03/09	Lec5: B+	
9	03/16	Canceled!	
10	03/23	Lec6: B+ 2	
11	03/30	Spring break!	
12	04/06	Lec7: hash index	
13	04/13	Lec8: External sorting	
14	04/20	Lec9: Transaction management	homework 3

Week	Date	Topics	Assignments
15	04/27	Lec10: Concurrency control	
16	05/04	Lec11: Crash recovery	
Final exam	05/11 5:00 -- 7:20pm		

Grading policy:

- 1 midterm ; 30%
- 2 assignments : 15%/each
- Final 35%
- Attendance 5%

A	[90, 100]
A-	[85, 90)
B+	[80, 85)
B	[75, 80)
B-	[70, 75)
C+	[65, 70)
C	[60, 65)
C-	[55, 60)
F	<55

Important dates:

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- **April 24, Thursday(14th week): Withdrawal deadline**

Academic honesty:

No tolerance on cheating! FAIL the course on the FIRST attempt!

Consult the University Statement on Academic Integrity: http://ecatalog.calstatela.edu/content.php?catoid=1&navoid=26