CSCI 3700 (001) - Database Management System

Syllabus

Fall 2019

Instructor

Dr. Qin Ding
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Email: dingq@ecu.edu
Phone: (252) 328-9686
Office hours: Tuesday and Thursday 2:00-3:15pm, Thursday 11-12, Friday 2:00-3:30pm, and by appointments.

Meeting Time and Classroom

Tuesday & Thursday 12:30-1:45pm, Austin 303

Textbook

Database System Concepts (7th Edition), Abraham Silberschatz, Henry F. Korth, and S. Sudarshan, McGraw-Hill, 2019.

References

- A First Course in Database Systems, Jeffrey D. Ullman and Jennifer Widom, Prentice Hall, 2008.
- Fundamentals of Database Systems, Ramez Elmasri and Shamkant B. Navathe, Addison-Wesley, 2016.
- Database Systems: The Complete Book, Hector Garcia-Molina, Jeffrey D. Ullman, Jennifer D. Widom, Prentice Hall, 2009.

Prerequisites

CSCI 3200 - Data Structure and Its Applications, or
CSCI 2540 - Data Abstraction and Object-Oriented Data Structures

Catalog Description

Relational database systems theory and database development. Topics include relational data model and integrity constraints specification, data modeling and relational schema design, normalization of relational schema, relational algebra, SQL, and database programming.

Goal

This course focuses on the theory and techniques of relational database. It covers the fundamental concepts of the relational model and entity-relationship model, the SQL query languages, and the database design theory. It also aims to develop students' skills to design and implement databases. Oracle will be used in this course.

Upon completion of this course, the student will be expected to:

- Demonstrate a conceptual understanding of the multi-faceted view of relational database systems and theoretical foundations of the relational data model.
- Perform conceptual data modeling, develop entity-relationship data models, and map conceptual data models to relational data models.
- Write database queries using relational algebra and SQL.
- Perform logical database design based on functional dependencies and normal forms.
- Demonstrate practical skills in using a relational database management system.

Topics to be covered

- Relational Model and Relational Algebra Query Language
- Basic SQL
- Intermediate and Advanced SQL
- Database Design: The Entity-Relationship Approach
- Database Application Design
- Relational Database Design Theory
- Other possible topics (such as XML, Introduction to Data Mining, etc.) – subject to change depending on pace of class

Required Work and Grades

Students are expected to attend all the lectures and to complete all the assignments. There may be in-class activities with credits, which will be counted toward assignment grades. Overall grades will be based on midterm, final exam, and assignments. No late homework submission will be accepted. Final exam will be comprehensive. Class work will be counted as follows.

- Assignments (including in-class activities) - 45%
- Midterm exam - 25% (Thursday, Oct. 3 – date subject to change)
- Final exam - 30% (Thursday, Dec. 12, 11:00-1:30pm)

Cutoffs for grades will tentatively be as follows. Those cutoffs will not be raised.

Grade	Quality Points	10-Point Scale
A	4.0	94-100
A-	3.7	90-93
B+	3.3	87-89
B	3	83-86
B-	2.7	80-82
C+	2.3	77-79
C	2	73-76
C-	1.7	70-72
D+	1.3	67-69
D	1	63-66
D-	.7	60-62
F	0	Below 60

Tentative Schedule

Outline	Reading
I. Introduction	Chap 1
II. Relational Model and Relational Algebra	Chap 2 & 6
III. Basic SQL	Chap 3
IV. Intermediate and Advanced SQL	Chap 4, 5
Midterm Exam	**Thursday, Oct. 3 (tentatively)**
V. Database Design: The Entity-Relationship Approach	Chap 7
VI. Database Application Design	Chap 9
VIII. Relational Database Design Theory	Chap 8
IX. Other possible topics	TBD
Final Exam (comprehensive)	**11:00-1:30pm, Thursday, Dec. 12**

Note that, except for the final exam schedule, the schedule may change as we progress to reflect the pace of the class.

Blackboard Access

Course materials will be made available on Blackboard: https://blackboard.ecu.edu/

Email

Announcements will be sent through emails if needed. It is the responsibility of the student to regularly check his/her email.

Academic Honesty

All work must be completed in a manner consistent with the ECU Academic Integrity. Please refer to the Student Handbook for further information on ECU's policy on academic integrity.

Weather emergencies

In the event of a weather emergency, information about ECU can be obtained through the following sources:

ECU emergency notices	http://www.ecu.edu/alert
ECU emergency information hotline	252-328-0062

Students with disabilities

East Carolina University seeks to comply fully with the Americans with Disabilities Act. Students requesting accommodations based on a covered disability must go to the Department for Disability Support Services, located in Slay 138, to verify the disability before any accommodations can occur. The telephone number is 252-737-1016.