**CSE 5330-005: Database Systems (Fall 2****022)**http://crystal.uta.edu/~elmasri/db1/images/UTA_bar.gif

**Instructor: Dr. Ranjan Dash**  
**Office:** Microsoft Teams **Office Phone:**

**Email address:** [Ranjan.Dash@uta.edu](mailto:Ranjan.Dash@uta.edu)

**Office Hours:**Tuesday 9:50 PM – 10:15 PM (after the class)  
**Classroom:** Microsoft Teams (Online synch) **Class Time:**Saturday 7:00 PM – 9:50 PM

**Class Home page:** <http://crystal.uta.edu/~dash/db1/>

http://crystal.uta.edu/~elmasri/db1/images/UTA_bar.gif

**GTA:** Sapkota, Amosh  
**Office Hours:**

**Office:   
E-mail:**

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**Required Textbook: *Fundamentals of Database Systems, 7th Edition,*** by Elmasri/Navathe, published by PEARSON.

**Course Content:**

This is a first course in database systems. The prerequisites are knowledge of programming and data structures (CSE 2320 or equivalent). The course will provide a good understanding of the *database theory, the relational model* and its *characteristics. Relational algebra, principles and SQL database language and some programming techniques will also be part of this course. The conceptual database design using the Entity-Relationship model and Extended Entity-Relationship modeling, and mapping to relational model and the file and index structures and search methods for database storage will also be covered in class. Finally, the course content covers the relational database theory the functional dependencies, normalization and the main principles of database security.*

We will cover the following chapters from the textbook (7th edition chapters in red). Parts or all of items 8 through 10 (below) may be omitted if time does not permit to cover all the topics.

1.    Chapters 1, 2: Introduction to database concepts and architecture. (Chapters 1, 2)

2.    Chapter 3: The relational data model. (Chapter 5)

3.    Chapters 4, 5: The SQL database language. (Chapters 6 & 7)

Test I

4.    Chapter 6 (Sections 6.1-6.5): The relational algebra (Chapter 8)

5.    Chapters 7, 8, 9: Conceptual database design using the Entity-Relationship model and Extended Entity-Relationship modeling, and mapping to relational model. (Chapters 3, 4 & 9)

6.    Chapters 13, 14: Database programming techniques. (Chapters 10 & 11)

Test II

7.    Chapters 17, 18: File and index structures and search methods for database storage. (Chapters 16 & 17)

8.    Chapters 15, 16 (Sections 16.1-16.4): Introduction to relational database theory, functional dependencies, and normalization. (Chapters 14 & 15)

9.    Sections 24.1, 24.2: Introduction to database security. (Chapter 30)

10.  Sections 6.6, 6.7: Relational calculus. (8.6, 8.7)

11.  Sections 19.1, 21.1: Overview of some of the material covered in the second database course (CSE5331).  (24.1, 25.1)

Test III

**Grading Policy:**

There will be **three tests** (tentatively on 10/1, 10/29 12/3), **in person,** during class time. Any change to this schedule for the tests will be posted on the course Web site. There is **no final exam**. In addition, **two projects** will be given. The final grade will be calculated based on the three tests (60% of grade) and projects (project 1 -15%, project 2 – 20% of grade). The attendance and class participation will be 5% of the grade. The grade cutoffs are generally as follows: 90-100 A, 75-89 B, 60-74 C. (Important Note: The exact cutoffs for each letter grade will be determined at the end of the course).

Projects will require JAVA programming using JDBC and Oracle or MySQL, or C/C++/C# programming with ODBC/Oracle or MySQL. References to the documentation will be provided on the course Web site.

Note: The Instructor reserves the right to modify the grading policy, course calendar and all other course policies. Make-ups for Tests may be arranged if your absence is caused by *documented* illness or emergency and requested in advance if possible. To get acceptance for make-ups a written explanation along with the supporting documents must be submitted to the Instructor.

**Submission Policy for Assignments:**

Assignments are due in their entirety on the due date by 12:00 midnight. There will be a 5% penalty per day late. Lateness is determined *with respect to your submission time*. For instance, an assignment due on Tuesday: if submitted on Wednesday before 12:00 midnight is considered one day late. *No assignments will be accepted if late more than three days*.

**Omega Machine:**

Make sure you have an account on Omega (omega.uta.edu), the computer offered by OIT that hosts the Oracle and MySQL database systems. This is the machine on which all projects will be implemented. UTA’s OIT (Office of Information Technology) has a help desk and a link from UTA’s Web page if you need assistance with Omega and other OIT managed resources. You will also have an account created for you on the Oracle database system.

**Disability:**

If any student needs special accommodations because of a disability, please contact the Instructor during the first week of classes.

**Academic Honesty:**

You are expected to adhere to the highest standards of academic integrity. This means that plagiarism in any form is unacceptable. Plagiarism will be assumed, until disproved, on work that is essentially the same as that of other students. Your work must be your own. This refers to tests, quizzes and programming projects. Should you be found to be cheating, at a minimum, you will fail that assignment and a letter will be sent to the Department, the College of Engineering, and to the Graduate School. The Instructor reserves the right to stronger action should the situation warrant it.

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[**Computer Science & Engineering Department**](http://www.cse.uta.edu/)[**University of Texas at Arlington**](http://www.uta.edu/) **P.O. Box 19015  
Arlington, TX  76019-0015 USA**