

BUAN 4320 (Database Fundamentals for Analytics) Course Syllabus Fall 2025

Course Information

Course Number: BUAN 4320 Sec 001
Title: Database Fundamentals for Analytics
Term: Fall 2025
Class Hours: Mon 10:00AM–12:45PM
Location: JSOM 11.202

Instructor Information

Name: Young U. Ryu
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Office Location: SOM 3.426
Office Hours: Tues 6:00–6:50PM or by appointment

Course Prerequisite

ITSS 3300 and ITSS 3311 and (MATH 1325 or MATH 2413 or MATH 2417) and (CS 2305 or MATH 2418 or MATH 2333 or OPRE 3333)

Course Description

The main subjects of the course include the understanding of relational database concepts, standard SQL, database design with the entity relationship diagramming technique, and NoSQL queries, in particular, with MongoDB shell commands.

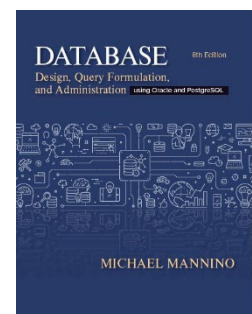
Learning Objectives

- Understanding relational database concepts
- Understanding the entity-relationship modeling technique
- Manipulating a relational database using the SQL language
- Understanding a NoSQL concept with simple MongoDB queries

Recommended Textbook

Michael Mannino. *Database Design, Query Formulation, and Administration* (8th Edition). SAGE Publication, 2022. (ISBN: 9781948426954 for paperback, 9781071927502 for ebook).

- Textbooks can be ordered online or purchased at the UT Dallas Bookstore (<http://www.bkstr.com/texasatdallasstore/home>).
- Less expensive electronic rental options are available at the textbook Web site (<https://us.sagepub.com/en-us/nam/database-design/book287841>) or other Web sites. (Do Google search for them.)



Other Course Materials

- **Class Notes:** Class notes are available at the UTD eLearning site (<https://elearning.utdallas.edu/>).
- **Database Systems Software:** *Microsoft Visio* (Windows) or *Visual Paradigm Community Edition* (Windows & Mac) will be used for data modeling. Detailed installation notes will be available at the eLearning class site. *Microsoft SQL Server* (or a comparable SQL engine including *MySQL*,

PostgreSQL, and *Oracle Database*) will be used as the main SQL platform. MongoDB will be used as the *NoSQL* database platform.

- **Scores and Grade:** Assignments and exam scores as well as the estimated final grade will be posted at the UTD eLearning site.

Assignments

Individual Assignments: There will be one data modeling assignment and one SQL assignment.

- Assignments will be posted at the eLearning site and must be submitted at the eLearning site.
- *Individual assignments must be done by individual students, not a group.*

Exams

There will be two exams. Detailed exam formats will be announced later.

Academic Calendar

	Date	Text	Descriptions	Notes
1	8/25	Syllabus Ch. 1 Ch. 3	<ul style="list-style-type: none"> • Course Introduction • Introduction to Database Management • The Relational Data Model 	
2	9/1	No Class: Labor Day		
3	9/8	Chs. 5 & 6	<ul style="list-style-type: none"> • Entity Relationship Modeling 	
4	9/15	Chs. 5 & 6	<ul style="list-style-type: none"> • Entity Relationship Modeling 	
5	9/22	Chs. 5 & 6	<ul style="list-style-type: none"> • Entity Relationship Modeling 	
6	9/29	Ch. 4	<ul style="list-style-type: none"> • Structured Query Language 	Assignment 1 Due
7	10/6	Ch. 4	<ul style="list-style-type: none"> • Structured Query Language 	
8	10/13	Exam 1	<ul style="list-style-type: none"> • Chs. 1, 3, 5, 6, 4 	
9	10/20	Chs. 4 & 9	<ul style="list-style-type: none"> • Structured Query Language 	
10	10/27	Chs. 4 & 9	<ul style="list-style-type: none"> • Structured Query Language 	
11	11/3	Chs. 4 & 9	<ul style="list-style-type: none"> • Structured Query Language 	
12	11/10		<ul style="list-style-type: none"> • NoSQL & MongoDB 	Assignment 2 Due
13	11/17		<ul style="list-style-type: none"> • MongoDB 	
14	11/24	No Class: Fall Break & Thanksgiving Holidays		
15	12/1		<ul style="list-style-type: none"> • MongoDB 	
16	12/8	Exam 2	<ul style="list-style-type: none"> • Chs. 4, 9, NoSQL, MongoDB 	

Grading Policy

- Exam 1 40%
- Exam 2 50%
- Assignment 1 5%
- Assignment 2 5%

Letter grades will be assigned based on the following formulae:

• A	total_score ≥ 93	• C+	77 ≤ total_score < 80
• A-	90 ≤ total_score < 93	• C	73 ≤ total_score < 77
• B+	87 ≤ total_score < 90	• C-	70 ≤ total_score < 73
• B	83 ≤ total_score < 87	• D+	67 ≤ total_score < 70
• B-	80 ≤ total_score < 83	• D	63 ≤ total_score < 67
• F	total_score < 60	• D-	60 ≤ total_score < 63

Course and Instructor Policy

Late Assignment: Late assignment returns are subject to penalties:

1 day late 15% penalty after the 2nd day not accepted

Makeup Exams: There will be no make-up exams, except for medical emergencies (written statement justifying the situation from a physician required). The written statement should include the physician's address and phone number for the verification purpose.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students.

Please see <http://go.utdallas.edu/academic-support-resources>.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

*The descriptions and timelines contained in this syllabus are
subject to change at the discretion of the Professor.*