

INFO 4707 – Data Modeling and Data Warehousing

Fall 2025 – In-person Sessions in FRLD 280 each Thu 6:30-9:20 pm

Instructor Contact

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Synchronous Sessions (Attendance is Required)

Time: Each Thu at 6:30 PM

Location: FRLD 280

Office Hours

Time: By Appointment

Zoom Link: <https://unt.zoom.us/j/89454193918?pwd=REpHQmxuQVBBC2lCVHN0RHIEY3F6QT09>

or Meeting ID: 894 5419 3918 / Passcode: 763770

Communication Expectations:

This course's primary communication tool is [UNT Canvas](#). All course materials, assignments, and feedback can be found on Canvas. The primary means of communication with the instructor is by posting questions in the [Microsoft Teams channel](#). Students can use this channel for reflections, inquiries, and resource sharing. Your participation in this discussion channel is essential for the success of the class. Students can expect to receive responses to Canvas communications or Teams posts within 24 hours on weekdays. Assignments, feedback, and grades will be posted on Canvas within two weeks after the submission due date. Videos and hands-on exercises will also be accessible on Canvas.

In addition to answering questions through the Teams channel, **the TA(s) will hold office hours weekly via Zoom**. Students are encouraged to attend office hours to discuss course-related questions or issues. If needed, students can schedule appointments with the TA or instructor to address any additional questions not resolved during office hours. If the TA cannot resolve the student's concerns, the student should reach out to the instructor through Canvas message or Teams. UNT CLEAR has created a webpage that offers [Online Communication Tips](#) to provide students with suggestions for engaging in online communication.

Course Description

This course is designed to meet the information industry's needs for data modeling and database design. It covers the fundamental concepts of current database systems and query methods, with an emphasis on the relational model. Topics include entity-relationship models, relational algebra, query optimization, normal forms, and data analytics skills in relational environments. The course also introduces the basic concepts of non-relational database systems. Project work and exercises primarily

involve modern relational DBMS systems.

Course Structure

This course has multiple sections, including online and face-to-face. All sections use Canvas as the main learning management system to deliver course materials and allow students to submit their assignments online. All course materials will be available on Canvas at the course site and accessible to all students. Students will submit all assignments through the tools available on Canvas.

Please note that this class is not self-paced. Each module will include related assignments with specific deadlines. Modules will be available by 10 a.m. on the Monday they are scheduled to start. The instructor will hold synchronous sessions every week. Recordings of these sessions will be uploaded to Canvas by Friday morning. Students are encouraged to review these recordings to grasp the course materials.

Course Prerequisites or Other Restrictions

Pre-requisite: none

Course Objectives

By the end of this course, students will be able to:

1. Explain the fundamental concepts of data modeling and database
2. Examine the conceptual design of the database using the Entity-Relationship modeling approach
3. Design a moderate-size database schema and interpret ERD models for query construction
4. Implement a database design on a Database Management System (MySQL or PostgreSQL)
5. Demonstrate an understanding of Structured Query Language (SQL)
6. Create SQL statements to perform tasks such as database table definition, new data input, and information retrieval
7. Become familiar with the broad spectrum of extensions for relational models and data alternatives.

Materials

- REQUIRED
 - [Database Design – 2nd Edition](#) by Adrienne Watt and Nelson Eng (CC BY 4.0 International Licence) [**Free Book**]
 - Essentials of SQL: Extracting Data by Gove Allen, Gary Hansen, and Robert Jackson [**This book is accessible via Canvas. You will find instructions on how to purchase this book**]

Calendar

The course is divided into 12 modules. The deadlines for each deliverable are on Canvas.

Table 1: Modules and Readings

Module	Topics	Readings	Course Work Due
W1: Aug 18 Module 0	Introduction to the Course	Syllabus, All modules up to Introduction	
W2: Aug 25 Module 1	Introduction to Databases	Canvas Materials	Pre-Class Survey (not graded)
W3: Sep 2 Module 2	Introduction to Database Models	Canvas Materials	
W4: Sep 8 Module 3	The Relational Database Model	Canvas Materials	Quiz 1
W5: Sep 15 Module 4	Conceptual (Entity Relationship) Design Basics	Canvas Materials	Quiz 2
W6: Sep 22 Module 5	Normalization of Entities	Canvas Materials	Quiz 3 Assignment 1
W7: Sep 29 Module 6	Database Design Lifecycle	Canvas Materials	Term Project Proposal Assignment 2
W8: Oct 6 Module 7	SQL: DDL and DML	Canvas Materials	Quiz 4 Assignment 3
W9: Oct 13 Module 8	SQL: Data Query Language (DQL) Basics	MyEducator Site Chapter 1-2	
W10: Oct 20 Module 9	SQL: DQL - Data Across Tables / Basics Joins	MyEducator Site Chapter 3	Quiz 5
W11: Oct 27 Module 10	SQL: DQL - Compounding Data / Aggregate Functions	MyEducator Site Chapter 4	Assignment 4 Term Project Design Phase
W12: Nov 3 Module 11	SQL: DQL - Subqueries / Structures	MyEducator Site Chapter 5	Assignment 5
W13: Nov 10 Module 12	Database Warehouse and Administration	Canvas Materials	Assignment 6
W14: Nov 17	Introduction to other data models	Canvas Materials	
Thanksgiving Break			

W16: Dec 1	Final Project Week		No Class
W17: Dec 8	Term Exam		Term Exam
W18: Dec 15	Grades Due		

Course Grading

Assessments*	Percentage of Final Grade
<i>Class attendance and participation</i>	5%
<i>Assignments - 6 total</i>	35%
<i>Quizzes – 5-7 total</i>	10%
<i>Term Exam</i>	20%
<i>Term Project – 3 parts</i>	30%
Total Possible	100%
<i>All assignments are graded on a 100pt scale, except the Term Exam which will be 250pts to accommodate its length</i>	

Letter Grades

A = 90% or higher

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = Below 60%

Class Attendance and Participation (5%): You are expected to participate in the synchronous sessions, coming prepared with questions. The grade for class participation will consider both quantity and quality of in-class/Teams discussion involvement.

Quizzes (10%): There will be several quizzes for this course. The material for the quizzes will focus on your knowledge of the terms and concepts from the course materials. Students will have two attempts to complete the quiz, and the highest score will be recorded. Students need to complete the quiz in 30 minutes.

Assignments (35%): The students are required to complete SIX assignments. Assignments are designed to apply the concepts from the course materials. Only original work will be accepted. You should prepare professional-quality assignments and use the required software to produce your work. **Handwritten**

submissions are not acceptable.

Term Exam (20%): There will be a term exam near the end of the semester. The exam will focus primarily on SQL statements. The exam will require a demonstration of all the materials on that topic. The Exam will be available on the Canvas class website. The instructions on how to take the exam will be announced one week prior to the exam.

Term Project (30%): Term project topics and their specifications will be distributed and discussed in class. Students will work in teams to design and implement a database application using MySQL or PostgreSQL. The students are required to demonstrate the knowledge and skills learned in class in the project.

Late Work: Turn in your assignments by submitting them on the Canvas assignment by the deadline. If an emergency arises that prevents you from submitting any classwork, you should contact the TA/instructor as soon as possible before the due date. Late work without the instructor's permission will receive a grade with a 10% penalty per day after the due date.

Online Resources: The class provides hands-on tutorials through the MyEducator book within Canvas. Instructure will also post video tutorials on SQL, which should satisfy most of the needs for this course. I also recommend you use other online resources like:

- LinkedIn Learning Free access for the UNT students
- www.youtube.com
- W3 Schools Online Tutorial

Software/Hardware Requirements: In this class, we will use the following free online applications to draw the table relationships:

- www.lucidchart.com
- Draw.io

Mainly, we will use SQL within My Educator Book online. But for the final project, students will need to use MySQL/PostgreSQL, an open-source, free Database Management System. You can use any of the following options:

- MySQL/PostgreSQL Workbench is available on Windows and Mac
- MySQL and PgAdmin provide a graphical interface and powerful coding interface at the same time.
- SQL Fiddle - Very good online SQL. On the right side, build your DB. On the left side run queries.
- www.tutorialspoint.com
- <https://www.w3schools.com/sql/default.asp>

Course Technology & Skills

Minimum Technology Requirements

- Computer
- Reliable internet access
- Speakers

- Microphone
- Microsoft Office Suite
- [Canvas Technical Requirements](https://clear.unt.edu/supported-technologies/canvas/requirements) (https://clear.unt.edu/supported-technologies/canvas/requirements)

Computer Skills & Digital Literacy

Basic computer knowledge using any operating system is required. Using the learning management system (Canvas), using email with attachments, creating and submitting files in commonly used word processing and spreadsheets, downloading and installing software.

Technical Assistance

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk: [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm) (http://www.unt.edu/helpdesk/index.htm)

Email: helpdesk@unt.edu

Phone: 940-565-2324

In Person: Sage Hall, Room 130

Walk-In Availability: 8am-9pm

Telephone Availability:

- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-10554-4212710328) (https://community.canvaslms.com/docs/DOC-10554-4212710328)

Rules of Engagement

Rules of engagement refer to the way students are expected to interact with each other and with their instructors. See these [Engagement Guidelines](https://digitalstrategy.unt.edu/clear/online-communication-tips.html) (https://digitalstrategy.unt.edu/clear/online-communication-tips.html) for more information.

Course Evaluation

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey, they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website at <http://spot.unt.edu/> or email spot@unt.edu.

Course Policies

Attendance Policy

The on-campus students are expected to attend their in-person sessions. The online students are not required to attend synchronous sessions, but they are expected to view the recordings (for online sessions).

Late and Missing Work

Students are expected to submit all coursework on time. If an extenuating circumstance, such as a medically diagnosed illness or family emergency, arises, which prevents you from submitting your assignments, you should contact the instructor as soon as possible before the due date. Late work without the permission of the instructor will receive a grade with a 10% penalty (or 10 points out of 100) per day after the due date. A student who is having trouble with assignments is strongly encouraged to contact the instructor as early as possible for personal advice.

A grade of Incomplete (I) will be given only for a justifiable reason if the student has completed 60% of the course and is currently passing the course. The student is responsible for meeting with the instructor to request an incomplete and discuss requirements for completing the course. If an incomplete is not removed within the time frame agreed to by the instructor and student, the registrar's office will automatically change the grade to F. See the UNT Catalog for policies.

A grade of Withdraw (W) or Withdraw-Failing (WF) will be given depending on a student's attendance record and grade earned. Please note that a student who simply stops attending class and does not file a withdrawal form may receive an F. See the UNT Catalog for policies.

Plagiarism Policy

Plagiarism will not be tolerated in this course. **Plagiarism and the copying of anyone's work will be considered cheating and will result in a ZERO (0) for the assignment.** All work must be the original creation of the student. Although students are welcome to hold study groups to work on assignments, each submission must be unique. Taking a picture of or copying/pasting someone else's work and submitting it as your own is considered plagiarism.

Class Participation Policy

The students are required to follow course schedule, attend online sessions, and finish the class work, assignments, and term projects. Students are expected to study 9-12 hours per week to achieve satisfactory class performance. Students do not have programming experience are required to find extra materials to study.

Examination Policy

The Term Exam will be available on the Canvas class website. The instructions on how to take the exam will be announced one week prior to the exam. Term Exam will be available online for one week but must be completed within a 3-hour once started. If an emergency arises that prevents you from taking the exam at the specified date & time, you should contact the instructor as soon as possible before the due date. If you experience technical difficulties during the exam, students should contact the Student Helpdesk document the remedy ticket number, and then notify the instructor.

Assignment Policy

Students should submit the assignments and term project reports via Canvas's submission drop box at canvas.unt.edu using doc (or .docx) files, details will be included in each assignment.

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty that prevents students from completing a time-sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324 and obtain a ticket number. The instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

Instructor Responsibilities and Feedback

- Helping students grow and learn
- Providing clear instructions for projects and assessments
- Answering questions about assignments
- Identifying additional resources as necessary
- Providing grading rubrics
- Reviewing and updating course content
- Respond to students' emails and questions posted to the discussion boards within two days except for the weekends
- Assignment grades and feedback will be returned to the students within two weeks after the submission deadline.

Syllabus Change Policy

Any changes to the syllabus, course information, and due dates will be communicated within CANVAS using the Announcements feature. Thus, students are required to check announcements regularly. CANVAS is the authority where any discrepancy between the syllabus and CANVAS is found.

UNT Policies

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in academic penalties or sanctions ranging from admonition to expulsion from the University. Reminder: Plagiarism includes but is not limited to copying and pasting materials from the internet and turning in the same work as another student. **In this course, whether or not the instance is sent forward for a finding, all students involved will receive a ZERO (0) for any assignment that exhibits this.**

ADA Policy

UNT makes reasonable academic accommodations for students with disabilities. Students seeking accommodation must register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request

accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the [ODA website](https://disability.unt.edu/) (<https://disability.unt.edu/>).

Emergency Notification & Procedures

UNT uses Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom, and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classrooms, labs, discussion groups, field trips, etc. Visit UNT's [Code of Student Conduct](https://deanofstudents.unt.edu/conduct) (<https://deanofstudents.unt.edu/conduct>) to learn more.

Access to Information - Eagle Connect

Students' access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail [Eagle Connect](https://it.unt.edu/eagleconnect) (<https://it.unt.edu/eagleconnect>).

Student Evaluation Administration Dates

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the [SPOT website](http://spot.unt.edu/) (<http://spot.unt.edu/>) or email spot@unt.edu.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the [Electronic Code of Federal Regulations website](http://www.ecfr.gov/) (<http://www.ecfr.gov/>). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one

class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experiences integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

- (1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.
- (2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

Student Verification

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses](https://policy.unt.edu/policy/07-002) (<https://policy.unt.edu/policy/07-002>).

Use of Student Work

A student owns the copyright for all work (e.g. software, photographs, reports, presentations, and email postings) he or she creates within a class and the University is not entitled to use any student work without the student's permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- Use of the work does not affect any potential profits from the work.
- The student is not identified.

- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student's written permission.

Download the UNT System Permission, Waiver and Release Form

Transmission and Recording of Student Images in Electronically-Delivered Courses

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery. In the event an instructor records student presentations, he or she must obtain permission from the student using a signed release in order to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.
2. Instructors who video-record their class lectures with the intention of re-using some or all of recordings for future class offerings must notify students on the course syllabus if students' images may appear on video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.

Example: This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.

No notification is needed if only audio and slide capture are used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available for study purposes.