

BCIS 5420 Foundations of Database Management Systems

Instructor Contact

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Tutor: TBD

Tutor Office Location & hours: TBD

Communication Preference:

1. Email, for faster response, please use subject line prefix 5420-F20 <your topic>
2. Text for **urgent** situations (716-830-6129): Use prefix: 5420: your name. Incomplete texts will not be responded to.
3. Call in case of a real emergency!
4. Please review communication guidelines at [Online Communication Tips](https://clear.unt.edu/online-communication-tips) (<https://clear.unt.edu/online-communication-tips>)

Course Description

Introduction to database and database management systems technology within the framework of a business environment. Topics include the study of analysis, design, development, and implementation of database-oriented file organizations in business applications.

Course Structure

Although the course is a graduate level class for all majors, it is part of the BCIS Master of Science program. Consequently, it will be an intensive learning experience. The students in this class will be knowledgeable, inquisitive, persevering, and highly self-motivated. Thus, the knowledge gained will be limited only by the efforts put forth by the individual. Students will receive outside assignments in terms of reading material and computer work. Direction will be given on all outside work. However, it is the student's responsibility to determine their level of understanding of the assignments, ask for additional clarification and amplification when necessary, and complete that work in a timely manner. Students are responsible for all reading assignments, whether directly addressed in class or not.

The course will be delivered online and students are expected to carry on their work independently. The class will meet each week on Mondays over zoom at 6:30PM Central Standard Time. Class meeting is completely optional; however, everyone is encouraged to attend and ask questions. During the class meeting, instructor will go over the module for the week in detail using the book chapter and the slides.

Please Note: Each class meeting will be video recorded and made available to all the students during the semester. The class recordings may be used in the future for instructional purposes.

Course Prerequisites or Other Restrictions

The most important prerequisite is the ability to reason, get work done on time, and ask questions. Did we mention that ability to ask questions is a prerequisite? If not, here it is again, please develop, borrow, buy, or somehow acquire a habit to ask questions!

Course Objectives

This course is an introduction to database design in a corporate environment. Its primary focus is on the technical and management issues of database technology. The student will analyze, design, develop, and implement a database-oriented business application. Upon completion of the course, the student should be able to define, load, and navigate a GUI database application

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

1. Model various business flows using entity-relationship diagrams
2. Use SQL to design and implement ER diagrams into an actual relational database
3. Use SQL to query data
4. Understand why we need NoSQL databases and how to use them.
5. Understand what is “big data” and why we need to deal with it.

Materials

Please arrange access to the following at your earliest.

- Textbook: title *Modern Database Management, 13th edition*; authors are Hoffer, Jeffery A., Remesh, V., and Topi, Heikki; publisher Pearson. [E book to rent for the course](https://bulk-store.vitalsource.com/products/modern-database-management-jeff-hoffer-ramesh-v9780134792293) (https://bulk-store.vitalsource.com/products/modern-database-management-jeff-hoffer-ramesh-v9780134792293)
- Get your own login & **workspace** for [Apex](#) website for access to Oracle DB
- [Download Center for MongoDB](#)

Supplementary websites and/or readings:

- [W3 Schools for SQL Practice](#)
- [Mongo DB Tutorial and Practice Site](#)
- [This site allow you to run some SQL queries that you can write at the site.](#)
- [This site has given a number simpler examples for different options for SELECT statement.](#)

Teaching Philosophy

Based on my 25-years of industry experience, I like to provide bigger context in which specific tools and technologies are used. I believe this makes the theory come alive. I also expect students to come to class with some questions and at the end, leave the class with some other questions!

Technical Requirements & Skills

General Requirements

- Reliable connection to the internet that can support video streaming.
- Install UNT's Respondus browser on the laptop/desktop [from UNT Recommended site](https://download.respondus.com/lockdown/download.php?id=165715487) (https://download.respondus.com/lockdown/download.php?id=165715487.)
- Install Zoom app on laptop/desktop and optionally on your smart phone or other suitable devices.

Laptop/Desktop Requirements

- It is preferred to have a laptop with a minimum of 8GB RAM and at least 10 GB free space.
- Operating System: Windows 7 or newer; Mac 2009 or newer.
- Ensure the Webcam, speakers, and microphones are working.
- Most of the software used in ITDS Department courses uses Microsoft Windows-based software, so please ensure you can use MS Windows-based software as needed by your course. Those with Mac will need to install a Windows VM (virtual machine)

Computer Skills & Digital Literacy

- Using Canvas
- Using email with attachments
- Downloading and installing software
- Using presentation and graphics programs

Rules of Engagement

Rules of engagement refer to the way students are expected to interact with each other and with their instructors online. Here are some general guidelines:

- Treat your instructor and classmates with respect in email or any other communication.
- Unless specifically invited, don't refer to your instructor by first name.
- Use clear and concise language.
- Remember that all college level communication should have correct spelling and grammar (this includes discussion boards).
- Avoid slang terms such as "wassup?" and texting abbreviations such as "u" instead of "you."
- Use standard fonts such as Ariel, Calibri or Times new Roman and use a size 10 or 12 point font
- Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING.
- Limit and possibly avoid the use of emoticons like :) or ☺.
- Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or sound offensive.
- Be careful with personal information (both yours and other's).
- Do not send confidential information via e-mail

See these [Engagement Guidelines](https://clear.unt.edu/online-communication-tips) (https://clear.unt.edu/online-communication-tips) for more information.

Success in an Online Course

While the online classroom shares many similarities with the face-to-face classroom, success in online education requires certain skills and expectations that one may not be aware of. Please review this webpage, [“How to Succeed as an Online Student”](https://clear.unt.edu/teaching-resources/online-teaching/succeed-online) (https://clear.unt.edu/teaching-resources/online-teaching/succeed-online).

Getting Help

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: <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)

Student Support Services

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center) (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (https://studentaffairs.unt.edu/counseling-and-testing-services)
- [UNT Care Team](https://studentaffairs.unt.edu/care) (https://studentaffairs.unt.edu/care)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry) (https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling) (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)

Other student support services offered by UNT include

- [Registrar](https://registrar.unt.edu/registration) (https://registrar.unt.edu/registration)
- [Financial Aid](https://financialaid.unt.edu/) (https://financialaid.unt.edu/)
- [Student Legal Services](https://studentaffairs.unt.edu/student-legal-services) (https://studentaffairs.unt.edu/student-legal-services)

- [Career Center](https://studentaffairs.unt.edu/career-center) (https://studentaffairs.unt.edu/career-center)
- [Multicultural Center](https://edo.unt.edu/multicultural-center) (https://edo.unt.edu/multicultural-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (https://studentaffairs.unt.edu/counseling-and-testing-services)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (https://edo.unt.edu/pridealliance)
- [UNT Food Pantry](https://deanofstudents.unt.edu/resources/food-pantry) (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- [Academic Resource Center](https://clear.unt.edu/canvas/student-resources) (https://clear.unt.edu/canvas/student-resources)
- [Academic Success Center](https://success.unt.edu/asc) (https://success.unt.edu/asc)
- [UNT Libraries](https://library.unt.edu/) (https://library.unt.edu/)
- [Writing Lab](http://writingcenter.unt.edu/) (http://writingcenter.unt.edu/)
- [MathLab](https://math.unt.edu/mathlab) (https://math.unt.edu/mathlab)

Course Content

List all required assignments and graded activities for the course, along with a short description and the points possible. Best practice is to clearly indicate both points and percentages if you are using both in the course. Here is a table example below:

| Week | Date Monday | Topics and Readings | Deliverable |
|-------------|------------------------|--|--|
| 1 | Aug-24 | Course overview / self-introductions / chit-chat... | One blank sheet of paper. |
| 2 | Aug-31 | Ch.1: The Database Environment and Development Process | Assignment 1,2,3 Available |
| 3 | Sep-07 | No Class | |
| 4 | Sep-14 | Ch.2: Modeling Data in the Organizations | Project Part-1, 2 Available |
| 5 | Sep-21 | Ch. 3: The Enhanced E-R Model | Assignment 1 due |
| 6 | Sep-28 | Ch.5: Introduction to SQL | |
| 7 | Oct-05 | Ch 5: SQL Queries In-Depth, In-Class Exercises. | Assignment 2 due |
| 8 | Oct-12 | Midterm Exam 6:30 – 8:30 pm CST (Ch. 1 – 3, 5) Respondus Lockdown Browser with WebCam | |
| 9 | Oct-19 | Ch.4: Logical Database Design and the Relational Model Ch.8: Physical Database Design and Performance | Project Part-1 Due Assignment 4 Available |
| 10 | Oct-26 | Ch.6: Advanced SQL | Assignment 3 Due |
| 11 | Nov-02 | Ch 7: Databases in Applications | |
| 12 | Nov-09 | Ch 10: Big Data Technologies & Introduction to NoSQL | |
| 13 | Nov-16 | Mongo DB Introduction | |
| 14 | Nov-23 | Mongo DB – Hands-on Team Presentations | Project complete folder due |
| 15 | Nov-30 | Special Topic: Regular Expressions Team Presentations | Assignment 4,5 due |
| 16 | Dec-07 | Final Exam 6:30 – 8:30 pm CST (Ch. 4, 5, 6, 7, 8, 10, NoSQL & Mongo DB, Special Topic) Respondus Lockdown Browser with WebCam | |

Course Requirements

| Assignment, Exam, Presentation, Projects, Quizzes | Points Possible | Percentage of Final Grade |
|--|------------------------|----------------------------------|
| <i>Mid-Term Exam</i> | <i>150</i> | <i>20%</i> |
| <i>Final Exam</i> | <i>150</i> | <i>25%</i> |
| <i>5 Assignments, each of 50 points</i> | <i>250</i> | <i>15%</i> |
| <i>10 Chapter Quizzes, each of 20 points</i> | <i>200</i> | <i>10%</i> |
| <i>Team Presentation</i> <ul style="list-style-type: none">• <i>Each team will have 2 members.</i> | <i>50</i> | <i>10%</i> |
| <i>Database Project Part-1 (Team based)</i> | <i>50</i> | <i>10%</i> |
| <i>Database Project Part-2 (Team based)</i> | <i>50</i> | <i>10%</i> |
| <i>Total Points Possible</i> | <i>900 points</i> | <i>100%</i> |

Grading

Include the grading scale (A-F) along with the point totals/percentages you will use to calculate the final grade. For example:

A = 810-900

B = 720-809

C = 630-719

D = 540-629

F = 0-539

Under rare circumstances, instructor may apply some curve and/or offer opportunity to earn bonus points. There is NO LATE WORK policy for the class, please submit the work in time. In case of medical or other emergencies please inform the instructor in advance if possible, however, without the proper documentation late work will not be accepted.

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. Towards the end of the semester, independent SPOT administrator will send students the survey emails for their **anonymous** feedback. The instructor receives the SPOT results about 2 weeks after all grades are finalized and committed.

Course Policies

Assignment, Exams, Homework, Project, Presentation Policy

- Please use Canvas as the only means of submitting your work and checking on due dates.
- All work submitted by students may be checked for any evidence of copying or cheating.

- Instructor reserves the right **to call on any student** for a 1-on-1 meeting for challenging a student to explain their work, or answers on an exam. If the student fails to come to the meeting and/or does not provide satisfactory explanation or answers then their grades may be discounted even down to a zero for that work that was challenged.

NOTE: 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 which 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.

Examination Policy

- There are no make-up exams. Any emergency or other extra-ordinary circumstances will be dealt by on a case by case basis.

Instructor Responsibilities and Feedback

- I will respond to emails generally within 24 hours except over the weekends and holidays.
- Feel free to send a reminder by email or text in case of no response.

Late Work

There is NO LATE WORK policy for the class, please submit the work in time. In case of medical or other emergencies please inform the instructor in advance if possible, however, without the proper documentation late work will not be accepted. Instructors have the prerogative to accept or not to accept late work. Specify your policy in this section.

Attendance Policy

Attendance not required during the weekly class meetings, but highly encouraged.

Class Participation

Please, please, please ask questions.

Syllabus Change Policy

If and when necessary, the instructor may make changes to the syllabus, course information, and due dates.

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 a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation.]

ADA Policy

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable 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 reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the [Office of Disability Access website](http://www.unt.edu/oda) at <http://www.unt.edu/oda>. You may also contact ODA by phone at (940) 565-4323.

Emergency Notification & Procedures

UNT uses a system called 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 Blackboard for contingency plans for covering course materials.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

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 classroom, 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.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

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 experience 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.
2. 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.
3. This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you and all other students for study purposes and may also be reused in future course offerings.
4. No notification is needed if only audio and slide capture is 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 to them for study purposes.