

UTK SIS BSIS Syllabus

COURSE INFORMATION

INSC 384 – Database Design, Spring 2021, 3 Credit Hours
University of Tennessee, Knoxville
Course Mode: Online, synchronous
Class Meetings: T/TH, 6:10pm-7:25pm, EST
ZOOM Course ID/Link: <https://tennessee.zoom.us/j/96079173577>



Faculty Contact Information

- Instructor: Kristin Chaffin
- Pronouns: she/her/hers
- Email: kchaffi3@utk.edu
- Office Hours: via Zoom, by appointment

SIS Office Information

- 450 Communications Bldg.
- 1345 Circle Park Drive
- Knoxville, TN 37996-0341
- SIS Office: 865.974.2148
- Fax (SIS): 865.974.4667

Welcome Statement

Welcome to INSC 384! We will be examining the process of database design in detail over the course of the term, as well as delving into questions about requirements gathering, what makes good design, SQL, database implementation, data security and ethics and more. I hope you will enjoy this course and leave with lots of new skills that you can immediately utilize in your career.

COURSE INFORMATION

Catalog Description

The course introduces the student to the process of database development, including data modeling, database design, and database implementation. Students learn basic interactive

SQL for both data definition and queries. Students practice design skills by developing a small database project.

(RE) Prerequisite(s): [INSC 210](#).

Additional Information

Though this is not specifically a database development course, we will explore various database systems, and you will examine databases in a few different systems. The goal is to allow you to compare the various ways vendors have implemented “standard” SQL, as well as to gain experience with multiple tools. You’ll learn how the design process works, as well as what modifications are needed in order to implement your designs with a specific platform.

Student Learning Outcomes

After successful completion of this course, you will be able to:

- Learn the evolution of databases and types of databases
- Explain fundamental concepts of database design and implementation
- Understand the importance of good requirements, how to solicit them, and their impact on the quality of the final database design and implementation
- Be able to weigh, discuss and justify design decisions
- Develop proficiency with entity-relationship modeling
- Learn how to use SQL to create, manipulate and query databases
- Practice database design and implementation

Course Design

This course adopts an active learning approach. It is delivered synchronously via ZOOM. Course content will incorporate lectures, live demonstrations, hands-on activities, and discussion. You will complete many individual assignments, and will have the opportunity to gain extra credit in a couple of places through the course. Course content and activities will be managed via Canvas. You will use Canvas to submit your assignments and your grades will also be returned using this system.

Required Text(s)



Coronel, Carlos and Morris, Steven. Database Systems: Design, Implementation and Management, 13th. edition. Cengage Learning 2019

Recommended Text(s)

While there will be additional resources assigned during the term, there is not a specific recommended text. There are a number of good references out there though, and finding and sharing these with the class will positively impact your participation grade.

COMMUNICATION

Email

I am required to communicate with you through your UTK email address. If you prefer to use another address, consult the [OIT Helpdesk](#) to obtain directions for forwarding your UTK email to your preferred address if you do not wish to check both accounts.

Instructor Availability

Please don't hesitate to email me with updates, questions, or concerns. I will typically respond within 24 hours during the week and 48 hours on the weekend. I will notify you if I will be out of town and if connection issues may delay a response.

COMPUTING REQUIREMENTS AND RESOURCES

Requirements

- You must have adequate computing skills, including but not limited to use of word processing, web browsers, email, Zoom and Canvas software. You must learn how to submit your assignments using Canvas.
- You must have a high-speed Internet connection to participate in the class.
- You must have a UTK email account and have VPN installed and configured on the computer you will use during this course.
- In addition, you may need to install the following (we'll discuss and finalize this in class):
 - Visual Paradigm Community (modeling software)
 - SQLite (database system)
 - SQL Server Developer Edition
 - SQL Server Management Studio or Azure Data Studio
 - Visual C++ 2019 redistributable (required for MySQL Workbench)
 - MySQL Workbench (MySQL database client)
- Notepad++ is also a handy tool that is recommended.

Course Resources

The course Canvas site is available here: <https://utk.instructure.com/courses/121266>

You might find these additional links helpful: [Getting Started with Zoom](#), [Online@UT Canvas](#), the [UT Library](#).

Technical Support

The Office of Information Technology (OIT) provides support and training in using various technologies for students at no charge (see: <https://oit.utk.edu/>). In addition, there are many resources that are widely available on the internet – we'll explore some of these during the course.

COURSE ATTENDANCE AND PARTICIPATION POLICIES

We will work together to ensure your success in this class.

I expect that students will:

- Be prepared for all classes.
- Be respectful of others.
- Actively contribute to the learning activities in class.
- Abide by the UT Honor Code.

I will:

- Be prepared for all classes.
- Evaluate all work fairly and equitably.
- Be respectful of all students.
- Create and facilitate meaningful learning activities.
- Behave according to University codes of conduct.

Attendance and Participation

It is assumed that each student be present and speak in class -- the equivalent of a "B" grade for "participation." Missing classes or failing to participate will lower your grade; frequent participation will raise the grade.

Regular attendance is required and necessary. A substantial portion of your grade will be based on in-class work and participation. Unexplained absences will affect your grade. Contact me as soon as possible if you cannot attend class (preferably ahead of time).

If you will be absent from class, you must:

- Inform me in advance or as soon as possible after class.
- Submit any work due from the missed class period.
- Listen to class recording, if available.
- Obtain notes, handouts, etc. from Canvas.
- Check with classmates for notes, announcements, etc.

Acceptable reasons for absence from class include:

- Illness
- Serious family emergencies
- Special curricular or job requirements (e.g., field trips, professional conferences)
- Military obligation
- Severe weather conditions
- Religious holidays

- Participation in official university activities (e.g., music performances, athletic competition or debate)
- Court imposed legal obligations (e.g., jury duty, subpoena)

Missing more than one class meeting for reasons other than those listed above may have a negative impact on your course participation grade.

Inclement Weather

The chancellor (or appointed representative) may officially close or suspend selected activities of the university because of extreme weather conditions. When a decision to close is made, it applies to all classes (whether on-campus or online). The information is distributed to the campus community, shared with local media, and posted on the University homepage at <http://utk.edu>.

ADDITIONAL POLICIES AND POINTS OF INFORMATION

Disability Services

Any student who feels they may need an accommodation based on the impact of a disability should contact [Student Disability Services](#) in Dunford Hall at 865-974-6087, or by video relay at 865-622-6566, to coordinate reasonable academic accommodations.

University Civility Statement

Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus. For more information, see the [UT Principles of Civility and Community](#).

CCI Diversity Statement

The College of Communication and Information recognizes that a college diverse in its people, curricula, scholarship, research, and creative activities expands opportunities for intellectual inquiry and engagement, helps students develop critical thinking skills, and prepares students for social and civic responsibilities. All members of the College benefit from diversity and the quality of learning, research, scholarship and creative activities is enhanced by a climate of inclusion, understanding and appreciation of differences and the full range of human experience. As a result, the College is committed to diversity and equal opportunity and it recognizes that it must represent the diversity inherent in American society. The College is acutely aware that diversity and fairness are foundations that unite the College's faculty, staff, students, and the larger communication and information community.

Instructor Status as a Title IX Mandatory Reporter

University of Tennessee faculty are committed to supporting our students and upholding gender equity laws as outlined by Title IX. Please be aware that if you choose to confide in a faculty

member regarding an issue of sexual misconduct, dating violence, or stalking, we are obligated to inform the University's Title IX Coordinator, who can assist you in connecting with all possible resources both on- and off-campus. If you would like to speak with someone confidentially, the Student Counseling Center (865-974-2196) and the Student Health Center (865-974-3135) are both confidential resources. For additional resources and information, visit titleix.utk.edu.

ASSIGNMENTS, ASSESSMENTS, AND EVALUATIONS

Academic Integrity

Students should be familiar with the [Hilltopics Student Handbook](#), and comply with all academic policies. This includes the University of Tennessee Honor Statement and the Academic Integrity Policy.

The Honor Statement reads: *“An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. ‘As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.’”* For more information, see the Honor Statement on the Academic Policies and Procedures page of the current [catalog](#) for student and faculty responsibilities.

The Academic Integrity policy reads: *“Study, preparation and presentation should involve at all times the student’s own work, unless it has been clearly specified that work is to be a team effort. Academic honesty requires that the student present his or her own work in all academic projects, including tests, papers, homework, and class presentation. When incorporating the work of other scholars and writers into a project, the student must accurately cite the source of that work.”* For additional information, see the [Student Code of Conduct](#).

Plagiarism

Plagiarism in any of its forms is intolerable, and attention to matters of documentation in all written work is expected and required. Inadvertence, alleged lack of understanding, or avowed ignorance of the various types of plagiarism are not acceptable excuses.

Specific examples of plagiarism are:

1. Copying without proper documentation (quotation marks and a citation) written or spoken words, phrases, or sentences from any source.
2. Summarizing without proper documentation (usually a citation) ideas from another source (unless such information is recognized as common knowledge).
3. Borrowing facts, statistics, graphs, pictorial representations, or phrases without acknowledging the source (unless such information is recognized as common knowledge).
4. Collaborating on a graded assignment without the instructor’s approval.
5. Submitting work, either in whole or in part, created by a professional service and used without attribution (e.g., paper, speech, bibliography, or photograph).

Students who may be unsure of the nature of plagiarism should consult the instructor or a guide for writing research reports. Resources are available through the University Libraries, including a [Citing Sources guide](#).

Infractions of academic integrity are penalized according to the severity of the infraction but may include a course grade of "F."

Assignments

This table provides a brief summary of assignment by name, due date, point value and percentage of final grade. A brief description of major assignments follows the table.

Assignment	Point Value	Percentage of Final Grade	Due Date
Participation/Attendance	30	10%	Ongoing
Journal (3 * 10 pts each)	30	10%	3/5, 4/2, 4/20
Exercises and Quizzes (5 * 20 pts each)	100	15%	Various
Database Requirements/System Context	40	15%	2/12
ER model	40	15%	3/19
Peer Reviews	40	15%	4/9
Final exam	100	20%	TBD
TOTAL	380	100%	

Journal: Students will journal throughout the term, capturing information such as vital lessons learned, questions and answers, and avenues where further investigation is desired. The intent is to reflect on what you've learned and what you still would like to discover. These will be posted to Canvas discussion boards. Comments posted to other students' journals will count towards participation credit.

Database Requirements/System Context: You will investigate and document the system and user requirements as well as the context of use for a system of your choice.

ER model: You will construct an ER model for the system you chose in the first assignment.

Peer reviews: You will be evaluating other students' ER models, in light of their specified requirements and context.

Preparing Assignments

Student work is assigned a grade based on quality of thought and writing style, thoroughness of research and of references, appropriateness of length, and originality. Only exceptional work will receive an "A" grade.

- I prefer that you use either APA or MLA citation styles.

- All sources must be cited; quotations must be formatted and attributed correctly. Not doing so constitutes plagiarism.
- Grades for assignment submissions that include incomplete in-text citations or reference lists will be lowered by one-half grade level (e.g., an assignment that would have received 17/20, or an 85/100: B, will be lowered to 16/20, 80/100: B-).
- All assignments must be word-processed, double-spaced, with 1-inch margins and include your name, date, and course number

Submitting Assignments

Assignments should be submitted to the “assignments” area of Canvas and are due on/by 5:00 p.m. EST/EDT on the due date listed on the syllabus, unless otherwise noted on the syllabus. Note that some assignments require posting to discussion boards – check the assignment for specific details. I will download the submissions from Canvas early the next morning. **I will ONLY download assignments from Canvas ONCE.** Therefore, if your assignment is not submitted by the deadline...

- You must send me an email informing me that your assignment will be late. **A late penalty of 5% per day will be applied** unless prior arrangements have been made with the instructor. Assignments submitted more than 5 days after the due date will receive no credit and will not be graded.
- When it’s ready, you must submit it to me via email, as an attachment

Assigning Grades

Please note that I do not assign letter grades for individual assignments, but will mark your paper with my comments and provide a point score. If you’d like to compute a letter grade based on the score provided, divide your score by the total points possible for the assignment. For example, if you earned 23 out of 25 points on an assignment, your percentage grade would be 92. Your final semester grade will be based on total points earned/total possible points over the course of the semester.

Grading Scale

Semester grades will be assigned according to the following scale:

A	93-100	Superior performance (4 quality points)
A-	90-92.99	Intermediate superior performance (3.7 quality points)
B+	88-89.99	Very good performance (3.3 quality points)
B	83-87.99	Good performance (3.0 quality points)
B-	80-82.99	Intermediate good performance (2.7 quality points)
C+	78-79.99	Fair performance (2.3 quality points)
C	73-77.99	Satisfactory performance (2.0 quality points)
C -	70-72.99	Unsatisfactory performance (1.7 quality points)
D+	68-69.99	Unsatisfactory performance (1.3 quality points)
D	63-67.99	Unsatisfactory performance (1.0 quality points)
D -	60-62.99	Unsatisfactory performance (0.7 quality points)
F	0-59.99	Failure performance (0.0 quality points)
S		Satisfactory; only assigned for C or better work when a course is taken on a S/NC grading basis. Carries no point value.

NC	No Credit; indicates failure to complete a course satisfactorily, and is only assigned for C- or worse work when a course is taken on a S/NC grading basis. Carries no point value.
I	Under extraordinary circumstances and at the discretion of the instructor, the grade of I (Incomplete) may be awarded to students who have satisfactorily completed a substantial portion of the course but cannot complete the course for reasons beyond their control. An I carries no quality points. If the I grade is not removed within one calendar year or upon graduation, it shall be changed to an F and count as a failure in the computation of the grade point average.
W	Indicates student has officially withdrawn from the course or the university. Carries no point value.

Incompletes

Based on adopted University of Tennessee-Knoxville policy, a grade of *I* (Incomplete) is reserved for emergencies that prevent the student from completing the course on time. Incompletes are granted only under "the most unusual of circumstances" and solely at the discretion of the instructor. Plan your semester's course of study carefully to ensure sufficient time to complete the required work. For students who simply "disappear" without contacting the instructor and without completing the required form, an "F" is submitted.

COURSE EVALUATION

You will be invited by email to evaluate the course at the end of the term via TNVoice. Please participate in this valuable process. I also invite your comments throughout the course and read all comments, suggestions, and recommendations. I will actively solicit feedback from you mid-way through the course so that I can incorporate changes before the end of the term.

DISCLAIMER

Be aware revisions may be made to this syllabus over the course of the semester. As such, the content contained within may be subject to change.

COURSE OUTLINE

Week	Class	Date	Topic	Class Activities/Assignment Due Dates, if applicable
1	1	1/21	Introduction	No required readings for this session
2	2	1/26	Concept Overview	See Canvas Week 2 Module for assigned readings
2	3	1/28	Concept Overview	See Canvas Week 2 Module for assigned readings
3	4	2/2	DB design and modeling	See Canvas Week 3 Module for assigned readings
3	5	2/4	DB design and modeling	See Canvas Week 3 Module for assigned readings
4	6	2/9	Relational model	Quiz 1 See Canvas Week 4 Module for assigned readings
4	7	2/11	Entity-Relationship Modeling	See Canvas Week 4 Module for assigned readings Context Assignment DUE 2/12 by 5pm
5	8	2/16	Entity-Relationship Modeling	See Canvas Week 5 Module for assigned readings
5	9	2/18	Entity-Relationship Modeling	See Canvas Week 5 Module for assigned readings Quiz 2
6	10	2/23	Database setup	See Canvas Week 6 Module for assigned readings
6	11	2/25	SQL DML and DDL	See Canvas Week 6 Module for assigned readings
7	12	3/2	More SQL	See Canvas Week 7 Module for assigned readings
7	13	3/4	More SQL	See Canvas Week 7 Module for assigned readings February Journal DUE 3/5 by 5pm
8	14	3/9	More SQL	See Canvas Week 8 Module for assigned readings Quiz 3
8	15	3/11	Mid-term review	See Canvas Week 8 Module for assigned readings
9	16	3/16	Normalization	See Canvas Week 9 Module for assigned readings
9	17	3/18	Normalization - OLTP vs OLAP	See Canvas Week 9 Module for assigned readings ERD DUE 3/19 by 5pm
10	18	3/23	Indexing	See Canvas Week 10 Module for assigned readings Quiz 4
10	19	3/25	Advanced SQL	See Canvas Week 10 Module for assigned readings

11	20	3/30	Alternative data models	See Canvas Week 11 Module for assigned readings
11	21	4/1	Alternative data models	See Canvas Week 11 Module for assigned readings March Journal DUE 4/2 by 5pm
12	22	4/6	Alternative data structures – XML and JSON	See Canvas Week 12 Module for assigned readings Quiz 5
12	23	4/8	Alternative data structures – XML and JSON	See Canvas Week 12 Module for assigned readings Peer Reviews of ERD DUE 4/9 by 5pm
13	24	4/13	Data Quality, Security and Ethics	See Canvas Week 13 Module for assigned readings
13	25	4/15	The profession	See Canvas Week 13 Module for assigned readings Quiz 6
14	26	4/20	Final review	See Canvas Week 14 Module for assigned readings April Journal DUE 4/20 by 5pm
			Final Exam	TBD (Exam period is Thursday - Thursday, April 22, 23, 26, 27, 28, 29)