## UTEP CS 5342 – Database Management
### Spring 2023 - Course Syllabus

| Course Details: 5342 CRN #24882 | Tuesdays and Thursdays: 12:00 PM-1:20 PM  
CCSB 1.0202 |
|----------------------------------|--------------------------------------------------|
| Instructor:                     | Name: Maria G. Jimenez  
Email: mgjimenezvelasco@utep.edu  
Office: CCSB 3.1202C  
Office hours: T & R 1:30 – 2:30 PM or by appointment.  
TA: TBA.  
TA’s office hours: TBA in Blackboard. |
| Course Description:             | Introduction to database fundamentals, database design and implementation, the use of database management systems for application, and current trends for data management. Topics in this course include relational algebra, entity-relationship models, relational data models, normalization, semi-structured data models, schema design, query processing, data integrity, privacy, security, and data analytics. |
| Prerequisites:                  | CS2302 with C or better. |
| Course Outcomes:                | Divided into the following three broad levels of Bloom’s taxonomy:  
**Level 1: Knowledge and Comprehension.** Level 1 outcomes are those in which the student has been exposed to the terms and concepts at a basic level and can supply basic definitions. The material has been presented only at a superficial level. Upon successful completion of the course, students will be able to:  
1a. Identify key characteristics of data models based on their level of abstraction (e.g., Entity-Relationship model, relational model) and explain how these models are used for data management.  
1b. Describe the components of a database system (e.g., query optimizer, query executor, storage manager) and how they are used.  
1c. Describe the main goals and functions of database management systems.  
1d. Identify database languages and tools for data management.  
1e. Critique an information application with regard to satisfying user information needs.  
1f. Identify database architectures (e.g., centralized, distributed, web-based).  
1g. Identify new trends in data management paradigms (e.g., semi-structured model, non-relational databases) and describe for which scenarios they are best suited.  
1h. Describe technical solutions to the challenges in information privacy, integrity, security, and preservation.  
1i. Identify the careers/roles associated with information management.  
**Level 2: Application and Analysis:**  
Level 2 outcomes are those in which the student can apply the material in familiar situations, e.g., can work a problem of familiar structure with minor changes in the details. Upon successful completion of the course, students will be able to:  
2a. Demonstrate uses of explicitly stored metadata/schema associated with data.  
2b. Use a relational query language (e.g. SQL) to elicit information from a database.  
2c. Demonstrate the ability to work in teams |
**Level 3: Synthesis and Evaluation.** Level 3 outcomes are those in which the student can apply the material in new situations. This is the highest level of mastery. Upon successful completion of the course, students will be able to:

3a. Design a database system from a problem statement to a conceptual, high-level data model (e.g., Entity-Relationship) using standard notation and modeling principles.
3b. Design a relational data model from a conceptual data model.
3c. Normalize a database using the 1st, 2nd, and 3rd normal forms.
3d. Use relational algebra and set theory for creating queries and query trees to retrieve information from a relational data model.
3e. Design and implement a relational data model in a relational database schema using a database management system.
3f. Design and implement an interface for a database system applying best practices for usability, privacy and security.

**Textbook:**


**Class Drop date:**

The last day to drop the course with an automatic "W" is March 30th, 2023. After this deadline, students will be dropped from a course with a grade of "F". A grade of "W" can be assigned after the deadline only under exceptional circumstances, and only with the approval of the instructor and the academic dean. In such a case, the student must petition for the "W" in writing and provide the necessary supporting documentation. (https://www.utep.edu/student-affairs/registrar/Academic%20Calendars/academic-calendar.html)

**Technology requirements:**

Regular access to a computer or device with a camera and microphone, consistent internet, Blackboard, and your UTEP e-mail account are needed. It is your responsibility to get this material and be ready for the course.

Course content is delivered through the Blackboard learning management system. Ensure your UTEP e-mail account is working and you have access to the Web and a stable web browser. Google Chrome and Mozilla Firefox are the best browsers for Blackboard. When having technical difficulties, update your browser, clear your cache, or switch to another browser. You will need access to a computer/laptop, scanner (or a mobile App that can scan a document), and a device with a webcam. You will need to download or update a list of software provided in the Blackboard shell, including MySQL. Instructions will be provided at least a week before the software is needed.

IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk as they are trained specifically in assisting with the technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

**Grading:**

Your semester grade will be based on a combination of participation, attendance, quizzes, assignments, presentations, and exams. Your performance is an indicator of your ability to master the topic. Decide to work NOW for the grade you want. Students who keep up with the materials, do all the assignments, attend the class and participate in the learning experiences typically do well. Your grade will be calculated as shown below.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exams: exams (40%) and final exam (10%)</td>
<td>50%</td>
</tr>
<tr>
<td>Project deliveries including assignments and presentations</td>
<td>35%</td>
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<tr>
<td>Active class participation: homework, exercises and quizzes (if the case), and activities</td>
<td>15%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</table>
The Final Comprehensive Exam will cover the complete material. At least 70% of attendance is required to take the final exam and get a final grade. No more than 5 out of the overall will be deducted if you must take the final and do not take it. Student with grades greater than or equal to or 80 will be exempt from taking the final exam, keep their same grade.

Examples:
Overall grade before taking the final exam = 74, you must take the final exam. If you do not take it your final grade will be 69 (“D”). Otherwise, if you take it and get 7 points, your grade will be 74 + 7 = 81 getting a B as Final Letter Grade.
If you grade before taking the exam >=80 and <90, you will be exempt to take the final and your final letter grade will be B.
If your grade before taking the final exam >=90, you will be exempt from taking the final exam, and your final grade will be A.

Your grade will be calculated using the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Level of Work</th>
<th>Percentage Range</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent, distinguished</td>
<td>90% - 100%</td>
</tr>
<tr>
<td>B</td>
<td>Very good, above average</td>
<td>80 – 89%</td>
</tr>
<tr>
<td>C</td>
<td>Average, Normal</td>
<td>70 – 79%</td>
</tr>
<tr>
<td>D</td>
<td>Below Average</td>
<td>60 – 69%</td>
</tr>
<tr>
<td>F</td>
<td>Failing</td>
<td>&lt;60%</td>
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A grade of "I" (Incomplete) will be assigned only in circumstances in agreement with the current UTEP Undergraduate Catalog. Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

If you are having issues with your computer, as mentioned above, ask for help at the help desk, and try to get another computer from the library or the CS Department (Tech Support). If you have issues and do not submit the assignment on time because completing the assignment at the last minute will not be a valid excuse for a deadline extension. A student unable to take an exam due to an emergency must inform me of that fact on or earlier than the day of the exam and arrange a make-up exam. Any student requiring make-up will have to document his/her excuse. Only one excuse per student other than COVID-19 cases or emergencies such as car accidents. Any personal business, including work or travel, that cause your absence in class is not a valid excuse, and no deadline extension will be given.
Make-up exams or quizzes, or exercises will be only for those students who presented a valid excuse.

** Late work will not be accepted. Don’t even ask, please. It will not be granted. **

** Attendance and participation:** This is an in-person course. Attending the class will allow you to practice, participate, clarify doubts, and complete activities. To earn full credit for attendance, you should plan to show up on time, stay for the entire session, work on your assignments, not conduct activities unrelated to class in the classroom, and follow instructions from the teaching team.

As mentioned above, at least 70% attendance is required to take the final exam and get a final grade. More than four unexcused absences may result in being dropped from the course or failing the course because of absences. If any reason for missing classes, email me as soon as possible and additional instructions will be given by email, depending on the case. Attendance in the course is determined by participation in the learning activities of the course. Your participation in the course is important not only for your learning and success but also for creating a community of learners. Participation is determined by the completion of the following activities:
● Reading/Viewing all course materials to ensure understanding of assignment requirements,
● Participating in an engaging discussion with your peers on the discussion boards and team journals,
● Participating in scheduled Blackboard Collaborate sessions,
● Completing session activities (e.g., quizzes, polls) indicated in the Blackboard course shell.
● Participating in any other activity related to the course, indicated by the teaching instructor.

Because these activities are designed to contribute to your learning each week, they cannot be made up after their due date has passed. Due to non-performance in the course or excessive non-excused absences (see UTEP Undergraduate Catalog for a list of excused absences), you may be dropped from the course with a grade of “W”. A 72-hour advance notice will be provided to you via email.

Any special case not included in this syllabus will be discussed with the chair of the department and the corresponding authorized personnel to make a final decision.

**Blackboard Collaborate sessions:** The instructor will occasionally record lectures using Blackboard Collaborate. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP’s acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. You may not share class session recordings outside of this course. Doing so may result in disciplinary action.

**Assignments and hands-on in class:** Assignments and activities must be turned in on time. Assignments and activities will not be received or graded if turned in via email, at least as the instructor indicates. Assignments for this course are assessed according to rubrics. Each assignment will be provided with the corresponding rubric.

**Exams**

We will have an exam per topic plus the final exam. Please, turn in your exam on time, and exams not turned in as indicated by the instructor will not be graded. It is your responsibility to submit the correct files and turn them in on time.

<table>
<thead>
<tr>
<th>Communication with each other</th>
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<tbody>
<tr>
<td>We will communicate face-to-face during class and small group meetings and virtually during office hours. Also, we will communicate via email and Blackboard.</td>
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<tr>
<td>There are several ways we can keep communication:</td>
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<tr>
<td>● During class section: I strongly encourage you to attend and be punctual. Do not hesitate to ask questions to clarify doubts. We have the willingness to support you to succeed in the course.</td>
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<tr>
<td>● Office Hours: I will have office hours for your questions and comments about the course.</td>
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<tr>
<td>● Email: UTEP e-mail is the best way to contact me. I will make every attempt to respond to your e-mail within 24-48 hours of receipt. When emailing me, email me from your UTEP student account, and please put the course number and your name in the subject line. For example: [CIS5342- John_Doe] or [CIS4342- John_Doe]. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name and your university identification number. If you don't follow the instructions, I cannot reply in time.</td>
</tr>
<tr>
<td>● Discussion Board: If you have a question that you believe other students may also have, please post it in the Help Board of the discussion boards inside of Blackboard. Please respond to other students’ questions if you have a helpful response.</td>
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</table>
| **Expectations** | **Classroom Etiquette:** If you are unavoidably late to class, please come in quietly so as not to disrupt other students. Cell phones, MP3 players, etc. should be out of sight in your backpack or another container. Please shut them off or set them to silent mode before class starts. If you expect an important call, please inform the instructor or TA at the beginning of class. Violations of this policy may result in loss of access to your device for the rest of the class, an individual meeting with the instructor to discuss your misuse of electronic devices and a reduction in your grade. Also, in some cases, the instructor could ask you to move from one computer to another. It is expected of your collaboration to respect and obey the given instructions in the classroom. It is not acceptable to be working on personal stuff in the classroom.

**Keep an inclusive workplace:** Remember that in the classroom, we have people of distinct cultures, customs, languages, genders, preferences, backgrounds, and physical conditions. Everyone is part of that diversity. Take advantage of that diversity to collaborate with others and learn from each other. Be respectful, patient, and helpful when interacting with peers and the teaching team. Practice good fellowship and manners: raise a hand if any question, respect turns, provide positive feedback to others respectfully, and be patient when others participate.

**Be respectful and behave in the classroom:** I will not allow any student to be rude and disrespectful in the classroom. This behavior may be reported to the CS office.

**Working in teams:** if working in teams, each member MUST contribute to accomplishing the assignment. It is expected to help each other to succeed under honesty policies. Everyone must have the opportunity to collaborate, share ideas, and discuss the solution. It is NOT acceptable that only one member or a few team members take control of the entire task without allowing the participation and collaboration of the rest of the team. Everyone should be prepared to answer any questions and give feedback to others. The final grade obtained must be analyzed by the team to make decisions about what should be improved in the future.

**Keep your work area clean and orderly:** Use your work equipment properly, tidy up your space, and place the chair properly before leaving the classroom. Don’t forget to log out.

**Be responsible for your learning:** Be punctual, read the material previously and complete activities/projects/assignments on time, attend class sections, check the Blackboard announcements frequently for any updates, follow instructions, submit your assignments/exams on time, collaborate with your peers, do not hesitate to ask if any question (“There is no such thing as a stupid question.”), Furthermore, practice academic honesty.

**Blackboard is not a public internet venue:** all postings should be considered private and confidential. Whatever is posted in these online spaces is intended for classmates and the instructor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space.

**Check the Blackboard announcements frequently for updates, deadlines, or other important messages.** It is recommended that you download the Blackboard Mobile App to receive notifications.

**Notify the professor if you plan to drop the course.**

**Collaborate with the course improvement by answering the surveys.**
Need for Assistance or special accommodation:
The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services, and activities with documented disabilities to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University.

If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined, or which will require academic accommodations, please notify me as soon as possible. Also, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, email cass@utep.edu, or visit their office in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Also, if you are struggling with something in your personal life and get distressed, I recommend contacting COUNSELING AND PSYCHOLOGICAL SERVICES (https://www.utep.edu/student-affairs/counsel).

Student resources: UTEP provides a variety of student services and support:

Technology Resources :

• Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

Academic Resources :

• UTEP Library: Access a wide range of resources, including online, full-text access to thousands of journals and eBooks, plus reference service and librarian assistance for enrolled students.

• University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.

Individual Resources :

• Military Student Success Center: Assists personnel in any branch of service to reach their educational goals.

University Policies:

Standards of Conduct: You are expected to conduct yourself in a professional and courteous manner, as prescribed by the UTEP Standards of Conduct (http://sa.utep.edu/osccr/student-conduct/).

Academic Honesty:

Graded work is to be completed independently and should be unmistakably your work (or, in the case of group work, your team's work), although you may discuss your project with other students in a general way. You may not represent your work material transcribed or copied from another person, book, or any other source (for example, a web page).

Academic dishonesty includes but is not limited to cheating, plagiarism, and collusion.

• Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying data (for example, program outputs) in
laboratory reports. Removing or copying pages or problems from exams or quizzes, including those posted on the World Wide Web.

- **Plagiarism** occurs when someone represents the work or ideas of another person as his/her own.
- **Collusion** involves collaborating with another person to commit an academically dishonest act.
- Any other activity that jeopardizes the integrity of this course.

Professors are required to--and will--report academic dishonesty and any other violation of the Standards of Conduct to the Dean of Students ([http://sa.utep.edu/dean/](http://sa.utep.edu/dean/)). Academic dishonesty in any form will not be tolerated. For a definition of academic dishonesty and its consequences, see your student handbook.

I expect all students to conduct themselves with the highest level of integrity. You have the opportunity throughout your business career to demonstrate your own level of integrity. Similarly, in this class, you will have an opportunity to demonstrate academic integrity. The two are inextricably linked. And let’s not be naïve: issues of integrity are rarely black and white – they are invariably some shade of gray. I encourage you to think about the standard you set for business integrity in your career and to implement that standard with respect to your academic integrity in this class. In so doing, you might want to keep the following quote from Samuel Johnson in mind: “The chains of habit are too weak to be felt until they are too strong to be broken”.

**Course materials:** The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated. Do not share or post any material, including slides, videos, word documents, etc., given/shared by the instructor. You are not allowed to make copies or take pictures of quizzes or exams.

<table>
<thead>
<tr>
<th>Class Schedule:</th>
<th>The calendar and the assignments are all found on the Blackboard.</th>
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<tbody>
<tr>
<td></td>
<td><em>I reserve the right to change any assignment, quiz, or exam if circumstances dictate. Students will be notified of such changes through an announcement. It is the student’s responsibility to be aware of such change.</em></td>
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| Make-up Work: | Make-up work will be given only in the case of a documented emergency. Note that make-up work may be in a different format than the original work, may require more intensive preparation, and maybe graded with penalty points. *If you miss an assignment and the reason is not considered excusable, you will receive a zero.* It is therefore important to reach out to me—in advance if at all possible—and explain with proper documentation why you missed a given course requirement. Once a deadline has been established for make-up work, no further extensions or exceptions will be granted. |

| Alternative Means Of Submitting Work In Case Of Technical Issues: | I strongly suggest that you submit your work with plenty of time to spare in the event that you have a technical issue with the course website, network, and/or your computer. I also suggest you save all your work (answers to discussion points, quizzes, and exams) in a separate Word document as a backup. This way, you will have evidence that you completed the work and will not lose credit. If you are experiencing difficulties submitting your work through the course website, please contact the UTEP Help Desk. You can email me your backup document as a last resort. |

| COVID-19 Precautions: | Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are strongly encouraged to report your |
results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

Masks are not required on campus, though they are highly encouraged for everyone. As things change, UTEP will keep communicating with us and let us know of any updates on this policy.

Note: Any exceptions to these rules will be notified to students via Blackboard and in class.
NOTES: When you doubt any of the above, don't hesitate to contact the instructor to check if you are following the authorized procedure.