

CMSC 461 – Database Management Systems
Monday/Wednesday 4:00PM - 5:15PM
Sondheim Hall 108

Instructor: Mr. Lawrence Sebald (lseballd1@umbc.edu)

Office Hours: TBA

Course Description:

This course covers database management and the different data models used to structure the logical view of databases. The course also covers database design and implementation techniques, including file organization, query processing, concurrency control, recovery, integrity and security.

Course Website:

<https://www.csee.umbc.edu/~lseballd1/cmsc461-sp2023>

Textbook:

Required: Database System Concepts (7th Edition). Avi Silberschatz, Henry F. Korth, S. Sudarshan. McGraw-Hill, 2020 – ISBN-13: 978-0-078-02215-9.

Textbook Website: <https://db-book.com/>

Prerequisite:

CMSC 341 with a grade of C or better.

Topics to be covered:

- The Relational Model
- Relational Algebra
- RDBMS Implementation
- SQL
- Non-Relational Databases & NoSQL

Required Work:

You are expected to complete all assignments for the course. Assignments will consist of five quizzes, an exam, a database programming project, and several homework assignments. Assignments must be submitted by the given due date to have the possibility to receive full credit.

In addition to the assigned work for the course, you are expected to attend class regularly and participate in class discussions. Please be sure to inform the instructor by email before class if you will be missing class for an excusable reason.

Grading Policy:

Assignment	Weight
Homework, Class Participation, Attendance, etc.	20%
Project	45%
Quizzes	20%
Exam	15%
Total	100%

Your final grade for the course will be determined by the weighted average of your scores on the assignments, determined by the weighting shown above. Grades will be assigned on the standard letter grade scale, as follows:

$[90, 100] \Rightarrow A$; $[80, 90) \Rightarrow B$; $[70, 80) \Rightarrow C$; $[60, 70) \Rightarrow D$; $[0, 60) \Rightarrow F$.

The instructor reserves the right to curve both final and individual assignment grades. If any curve is applied, it will only be to the benefit of the students.

A grade of Incomplete will only be issued under specific situations as directed by university policy. Failure to complete assignments by the prescribed due date is not a sufficient reason to grant a grade of Incomplete.

Quizzes and Exam:

There will be five quizzes and an exam in this course. All of these assessments will take place in the normal classroom, unless you are otherwise informed by the instructor. Quizzes will be scheduled on the course website, roughly 2-3 weeks apart. Your lowest **non-zero** quiz grade will be dropped and your quiz average will be calculated over the remaining four quizzes.

If you expect to miss a quiz or exam, you must make prior arrangements with the instructor for a make-up assessment. You must have a documented excuse (for instance, a doctor's note) for missing a quiz or exam.

Discussing any assessment with a student who has not already taken the assessment is cheating and will be dealt with in accordance with the UMBC Academic Integrity policy.

Late Policy:

All assignments are to be completed by the due date posted with the assignment. However, we do realize that sometimes things happen and an you may miss the due date of the assignment. You may turn in assignments up to five days late with a penalty of 10% off of your score per day (or any portion of a day) that the assignment is turned in late. That is to say, if an assignment is due by 11:59PM on March 1st, and you turn it in at 12:01AM on March 2nd, you will lose 10% off of your grade. For a more concrete example, if you would have received a 95% on an assignment, but you turn it in between [24, 48) hours late, you will receive a final score of 75% on the assignment. If you anticipate that you will turn an assignment in late, please let the instructor know as soon as possible so that you do not receive a 0 on the assignment by mistake.

Any portion of a day that an assignment to be submitted online is turned in late will trigger the late penalty. That means even if you turn the assignment in 0.1 seconds late, you will be penalized. Failure to turn an assignment in by 5 days after the assignment is due will result in a score of 0 on the assignment.

Assignments to be submitted in-class are due at the beginning of the class period. Any assignments turned in more than 15 minutes after the scheduled start of the class will be considered late.

Late submissions may be approved by the instructor without penalty for valid excuses. If you have some sort of emergency that prevents you from turning in an assignment on time, please contact the instructor by email as soon as possible to work out an alternate plan for turning in the assignment. The instructor may require documentation of the excuse (for instance a doctor's note) before approving a late submission in these cases.

Homework and Project Policies:

The following policy items apply to all homework assignments and projects assigned in this course:

- You are responsible for keeping up with assignments and other coursework. Homework assignments and the project assigned in this class may require a significant amount of time to complete. You should start on all assignments as soon as they are assigned to guarantee that you will have the required time to complete the assignment.
- Assignment descriptions, due dates, etc. will be posted on the course website. Failure to check the website is not an acceptable excuse for missing an assignment or not adhering to the assignment's instructions.
- You are expected to complete each assignment individually unless otherwise indicated on individual assignments. You are allowed to discuss the concepts behind assignments, however absolutely no direct collaboration on answers or code is allowed unless otherwise specified in the assignment description.
- Any written (non-code) portions of assignments to be submitted online must be typed using a word-processor of your choice. The only acceptable file format for written portions of assignments is a .pdf file. PDF documents must be formatted as Letter (8.5in x 11in) or A4 (210mm x 297mm) sized pages. Failure to meet these requirements may result in a lower grade on the assignment or a grade of 0 for repeated offenses. **You are not allowed to submit any assignments in Microsoft Word (.doc or .docx), Apple Pages, LibreOffice or any other such format. Convert these documents to PDF for submission.**
- If assignments require diagrams to be drawn or work to be shown for math, diagrams and work may be scanned into the document. **Please ensure that your handwriting is legible on any scanned portions of assignments!**
- Code portions of assignments will be submitted on GitHub (<https://github.com/>). You must have a GitHub account in order to turn in assignments, so if you do not already have an account with GitHub, please sign up for one at your earliest convenience. You are welcome to use an already existing GitHub account, but please be sure to associate your UMBC email account with the GitHub account to ensure that we will be able to tell which student each assignment belongs to.
- You may be asked to explain your solutions to assignments to the instructor. Failure to demonstrate an understanding of the solution that you provided is considered a violation of the UMBC Academic Integrity policy.
- For this class, if you use ChatGPT (or similar chatbots or AI-based text generation tools), you must describe exactly how you used the tool, including providing the prompt, original generation, and your edits. This applies to prose and code. **Not disclosing is an academic integrity violation.** This is not to suggest that using AI tools for classwork is encouraged or even should be attempted. Any AI-assisted work may receive significantly less credit than purely student-generated work, depending on the extent of substantive edits, achievement of learning objectives, and overall circumvention of those outcomes.
- Use of AI/automatic tools for grammatical assistance (such as spell-checkers or Grammarly)

or small-scale predictive text (e.g., next word prediction, tab completion) is okay. Provided the use of these tools does not change the substance of your work, use of these tools need not be disclosed on assignments

- While we do not have a strict coding standard for this class, you should strive to write readable code. The easier it is for the course staff to understand your code, the easier it will be for them to grade the code. In addition, if the staff can understand your code, it will be easier for us to give you partial credit for parts of your code that may not work perfectly. Thus, it is in your best interest to ensure that your code is readable, well-formatted, and well-commented.
- It is also in your best interest on coding assignments to explain your code in README files, including telling us if portions of your code do not quite work correctly. Explaining what does and does not work with your code, as well as explaining your thought process can help us to help you with constructive comments on how to improve. This is especially true if you are asking for help on an assignment (in office hours or by email).
- As we are using the Git version control system for submitting projects, it is highly recommended that you commit code early and often. **Committing early and often can be of extreme importance in case something goes wrong with your computer – you can always pull your code back down from GitHub on a different computer if needed.**

Academic Integrity Policy:

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Undergraduate Student Academic Conduct Policy, consult the following URL:

<https://academicconduct.umbc.edu/>

There is no tolerance for academic dishonesty in this course. Any and all acts of academic dishonesty will be treated severely, as prescribed in the UMBC Undergraduate Student Academic Conduct Policy.

The instructional staff of the course reserves the right to run cheat-checking software over any and all submissions for the course. We would much prefer if we did not have to resort to using such means, however.

Accessibility and Disability Accommodations, Guidance and Resources:

Accommodations for students with disabilities are provided for all students with a qualified disability under the Americans with Disabilities Act (ADA & ADAAA) and Section 504 of the Rehabilitation Act who request and are eligible for accommodations. The Office of Student Disability Services (SDS) is the UMBC department designated to coordinate accommodations that creates equal access for students when barriers to participation exist in University courses, programs, or activities.

If you have a documented disability and need to request academic accommodations in your courses, please refer to the SDS website at <https://sds.umbc.edu> for registration information and office procedures.

SDS email: disAbility@umbc.edu

SDS phone: (410) 455-2459

If you will be using SDS approved accommodations in this class, please contact the instructor to discuss implementation of the accommodations.

Sexual Assault, Sexual Harassment, and Gender Based Violence and Discrimination:

UMBC Policy and Federal law (Title IX) prohibit discrimination and harassment on the basis of sex, sexual orientation, and gender identity in University programs and activities. Any student who is impacted by sexual harassment, sexual assault, domestic violence, dating violence, stalking, sexual exploitation, gender discrimination, pregnancy discrimination, gender-based harassment or retaliation should contact the University's Title IX Coordinator to make a report and/or access support and resources:

Jackie Moran, Title IX Coordinator and Interim Director
410-455-1717 (direct line), jmoran5@umbc.edu

You can access support and resources even if you do not want to take any further action. You will not be forced to file a formal complaint or police report. Please be aware that the University may take action on its own if essential to protect the safety of the community.

If you are interested in or thinking about making a report, please use the Online Reporting Form (https://umbc-advocate.symplicity.com/titleix_report/index.php/pid364290?). Please note that, if you report anonymously, the University's ability to respond will be limited.

Notice that Faculty are Responsible Employees with Mandatory Reporting Obligations:

All faculty members are considered Responsible Employees, per UMBC's Policy on Sexual Misconduct, Sexual Harassment, and Gender Discrimination. Faculty are therefore required to report any/ all available information regarding conduct falling under the Policy and violations of the Policy to the Title IX Coordinator, even if a student discloses an experience that occurred before attending UMBC and/or an incident that only involves people not affiliated with UMBC. Reports are required regardless of the amount of detail provided and even in instances where support has already been offered or received.

While faculty members want encourage you to share information related to your life experiences through discussion and written work, students should understand that faculty are required to report past and present sexual assault, domestic and interpersonal violence, stalking, and gender discrimination that is shared with them to the Title IX Coordinator so that the University can inform students of their rights, resources and support. While you are encouraged to do so, you are not obligated to respond to outreach conducted as a result of a report to the Title IX Coordinator.

If you need to speak with someone in confidence, who does not have an obligation to report to the Title IX Coordinator, UMBC has a number of Confidential Resources available to support you:

- Retriever Integrated Health (Main Campus): 410-455-2542 / After-Hours 410-455-3230 [Monday – Friday; 8:30AM - 5:00PM]
- Pastoral Counseling via Interfaith Center: 410-455-3657; interfaith@umbc.edu [7 days a week; 7:00AM - 11:00PM]

Other Resources:

- Women's Center (for students of all genders): 410-455-2714; womenscenter@umbc.edu. [Monday – Thursday 10:00AM - 5:30PM and Friday 10:00AM - 4:00PM]

Child Abuse and Neglect:

Please note that Maryland law and UMBC policy require that faculty report all disclosures or suspicions of child abuse or neglect to the Department of Social Services and/or the police even if the person who experienced the abuse or neglect is now over 18.

Pregnant and Parenting Students:

UMBC's Policy on Sexual Misconduct, Sexual Harassment and Gender Discrimination expressly prohibits all forms of Discrimination and Harassment on the basis of sex, including pregnancy. Resources for pregnant, parenting and breastfeeding students are available through the University's Office of Equity and Inclusion. Pregnant and parenting students are encouraged to contact the Title IX Coordinator to discuss plans and ensure ongoing access to their academic program with respect to a leave of absence or return following leave related to pregnancy, delivery, adoption, breastfeeding and/or the early months of parenting.

Pregnant students and students in the early months of parenting may be entitled to accommodations under Title IX through the Office of Equity and Inclusion.

In addition, students who are pregnant and have an impairment related to their pregnancy that qualifies as disability under the ADA may be entitled to accommodations through the Student Disability Service Office.

Religious Observances & Accommodations:

UMBC Policy provides that students should not be penalized because of observances of their religious beliefs, and that students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the responsibility of the student to inform the instructor of any intended absences or requested modifications for religious observances in advance, and as early as possible. For questions or guidance regarding religious observance accommodations please contact the Office of Equity and Inclusion at oei@umbc.edu.

Diversity, Civil Dialogue, and Mutual Respect:

Students in this class are encouraged to speak up and participate during class meetings. Because the class will represent a diversity of individual beliefs, backgrounds, and experiences, every member of this class must show respect for every other member of this class.

Hate, Bias, Discrimination and Harassment:

UMBC values safety, cultural and ethnic diversity, social responsibility, lifelong learning, equity, and civic engagement.

Consistent with these principles, UMBC Policy prohibits discrimination and harassment in its educational programs and activities or with respect to employment terms and conditions based on race, creed, color, religion, sex, gender, pregnancy, ancestry, age, gender identity or expression, national origin, veterans status, marital status, sexual orientation, physical or mental disability, or genetic information.

Students (and faculty and staff) who experience discrimination, harassment, hate or bias or who have such matters reported to them should use the online reporting/referral form (https://umbc-advocate.symplicity.com/titleix_report/index.php/pid066642?) to report discrimination, hate or bias incidents. You may report incidents that happen to you anonymously. Please note that, if you report anonymously, the University's ability to respond will be limited.

Retriever Essentials:

Retriever Essentials is a faculty, staff, and student-led partnership that addresses food insecurity in the UMBC community. We offer free groceries, toiletries, baby items, and meal swipes, and have opportunities to engage and get involved. **All of the below resources are 100% free.**

The Essential Space: The Essential Space is Retrieve Essentials' in-person location in the Retriever Activities Center, room 235, where you can pick up free groceries, toiletries, and baby items. Please check the website for hours.

Mini Pantries: Mini pantries contain a selection of non-perishable foods available for free. They are located at the Retriever Learning Center in AOK Library and the Campus Police Station and are there 24/7.

Food Bags: To order personalized free bags of food, please complete the form available on the Retriever Essentials website. When your order is filled, you may pick it up from the 24-hour Campus Police Station. Orders take 1 week or more to fill.

Food Zones: There are also several locations throughout campus where you can pick up free, pre-packaged bags of non-perishable foods. These food zones include: The Campus Police Station, The Women's Center, Counseling Center, Mosiac Center, Off-Campus Student Services, Honors College, Residential Life Office, and the Pride Center

Save-A-Swipe: Save-A-Swipe creates a pool of meals swipes that become available to UMBC students who have been identified by trained staff as food insecure. Each swipe constitutes one meal.

Contact Information: Visit <https://retrieveressentials.umbc.edu/> to learn more about Retriever Essentials services. For further information please email retrieveressentials@umbc.edu.