

# MIS 3220

## Database Management and Design

Section 001 • Fall 2026

University of Minnesota Duluth

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### 1 Instructor Information

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**Instructor:** Abdou Elkenawy  
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**Homepage:** [www.d.umn.edu/~abdou](http://www.d.umn.edu/~abdou)  
  
**Class Time:** Tue/Thu, 2:00 PM to 3:15 PM  
**Location:** LSBE 265  
**Semester:** Fall 2026 (in person)  
**Credits:** 3

#### 1.1 Office Hours

Office hours: Tuesday 10:50 to 11:50 AM, Tuesday 11:55 AM to 12:25 PM, and Thursday 10:50 to 11:50 AM, in LSBE 365M. You can also catch me right after any class.

#### Remember

Office hours are for everyone, not just struggling students. Come to get ahead, ask questions, or just chat about course material. No appointment needed during scheduled times.

### 2 How to Contact Me

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As your instructor, I prioritize effective and timely communication. Please use the following methods **in order of preference**:

#### 2.1 1. In-Person Communication (Most Reliable & Encouraged)

Talk to me directly before or after class, or during my office hours. This is the fastest way to discuss course material, get clarification, or address concerns.

## 2.2 2. Canvas: Chat & Discussion Thread (Default for Course Questions)

For nearly all course-related questions, use Canvas. Two channels, depending on whether your question is private or general:

- **Canvas Inbox / Chat (private questions to me):** Send me a message directly through Canvas. Canvas automatically attaches your name and the course section, so I always know who is writing and which class they are in. Use this for any private course-related question that does not need to be visible to the rest of the class.
- **Canvas Discussion Thread, “Quick Class Questions” (general or public questions):** A pinned discussion thread will be available all semester for short, general questions about the class: assignment clarifications, syllabus details, scheduling, common misunderstandings. Post there if your question would benefit other students. Posting publicly keeps the answer visible and saves repeat questions.

Response window: within 48 hours during business days (M–F, 9 AM–5 PM).

## 2.3 3. Email (Last Option: Official Class Matters Only)

Email is reserved for **official** class matters that do not fit Canvas: documentation submission, formal grade disputes, FERPA-sensitive material, and similar. For routine questions, use Canvas instead. Email is slower for both of us.

- Must be sent from your official UMD email account.
- Include the course name and issue in the subject line (e.g., “MIS 3220: documentation for excused absence”).
- Response within 48 hours during business days.

### My Commitment

I commit to responding within 48 hours during business days through whichever channel you used. **Before contacting me with a question:** check the weekly overview page, the lab handout, and this syllabus first. If your question is fully answered there, I will point you back to it.

## 3 Course Description

This course provides comprehensive coverage of database management systems with emphasis on database design, implementation, and administration. Students will learn fundamental concepts of relational database theory, normalization, SQL programming, and database administration.

### 3.1 Course Highlights

- **SQL Programming:** Write real queries from day one, starting with your first SELECT and building up to joins, subqueries, aggregate functions, window functions, CTEs, and triggers
- **Database Design:** Master Entity-Relationship modeling, normalization principles, and logical database design techniques

- **Building Real Databases:** Create and manage tables, views, indexes, and transactions, and learn how query optimization makes databases fast
- **A Real Client Project:** Build the database layer for a real dataset in a team, from domain and ERD to a working, query-ready build you demo live

### 3.2 Course Structure

The course runs in three parts, each capped by a major assessment:

- **Weeks 1–7: SQL Foundations & Database Design.** Course setup and SQLite, then a steady build through SELECT, WHERE, aggregates, SQL functions, GROUP BY and HAVING, and ER modeling and schema design. Capped by **Exam 1** (Thursday, October 15).
- **Weeks 8–13: Advanced SQL & the Team Project.** JOINS, subqueries, CASE and UNION, DML and DDL, views, transactions, window functions, CTEs, triggers, indexes, and normalization. The **team project** kicks off in Week 8, with milestones checked live in lab in Weeks 9, 11, and 13. **Individual interviews** run during labs in Weeks 8–10.
- **Weeks 14–15 & Finals Week: Finish Strong.** Week 14 is the two-part **Exam 2** (December 1 and 3). Week 15 belongs to your project: query optimization Tuesday, then a work session with presentation dry-runs Thursday, when the final build is due. Finals week is **demo day**: presentations and team project defenses.

The last two weeks are protected on purpose. Beyond the final build, the dry-runs, and Exam 2, nothing new lands in Weeks 14–15. You finish the semester doing exactly one thing at a time.

### 3.3 Prerequisites

MIS 2201 (Information Technology in Business) or equivalent, with basic understanding of business processes and information systems.

## 4 The Weekly Rhythm

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Every week in this course runs on the same rhythm. Learn it once and you always know what is due and what comes next.

- **Before Tuesday: read the pre-lab.** Each week I post a short pre-lab reading: the foundation concepts for the week, a preview of Thursday’s lab, and a few practice exercises to try. In the ten weeks marked on the schedule, a short auto-graded **Pre-Lab Check** is due on Canvas before Tuesday’s class begins.
- **Tuesday: quiz first, then new material.** Class opens with the weekly quiz. You answer alone first, on Canvas. Then your team huddles for five minutes and turns in one paper answer slip. After the quiz, we dig into the week’s new material.
- **Thursday: lab.** Lab day is hands-on. You work the week’s lab in class, with help in the room, and turn in a lab report. This is where the course actually happens.
- **In between: practice sets.** Ungraded practice sets are posted with each week’s materials. They carry no points, and answers are released before Tuesday.

### **i Why the ungraded practice matters**

**The weekly quiz always samples the pre-lab and the practice sets.** That is the deal: the practice carries no points, but the quiz points come from the practice. If you did the reading and tried the exercises, you have already seen what the quiz asks. Every quiz also includes at least one question that reaches back to an earlier week, so older skills stay warm for the exams.

Two weeks are one-day weeks: Week 9 (fall break) and Week 13 (Thanksgiving). In those weeks the whole rhythm lands on Tuesday: quiz first, then the lab. Week 3 is a special case: Tuesday runs normally, and since there is no class that Thursday (instructor traveling), Lab 3 releases as a guided take-home with a walkthrough.

**Each week has a weekly overview page on Canvas.** It is the single starting point: open it first, and it tells you what to read, what is due, and what we are doing in class that week.

**Deadlines land when class begins, never at midnight.** Nothing in this course is due at 11:59 PM. Your evenings stay yours.

## **5 Learning Outcomes**

Upon successful completion of this course, students will be able to:

| <b>Course Learner Outcomes</b>                                                                          | <b>Program Goals</b> |
|---------------------------------------------------------------------------------------------------------|----------------------|
| Design and implement normalized relational databases using Entity-Relationship modeling techniques      | 2, 5                 |
| Write complex SQL queries including joins, subqueries, aggregate functions, and advanced SQL constructs | 2, 5                 |
| Create and manage database objects including tables, views, indexes, and triggers                       | 2, 5                 |
| Apply normalization principles to eliminate data redundancy and ensure data integrity                   | 2, 5                 |
| Enforce data integrity using keys, constraints, transactions, and triggers                              | 4, 5                 |
| Improve database performance using indexes and query optimization techniques                            | 5                    |
| Analyze business requirements and translate them into effective database solutions                      | 1, 2, 5              |
| Evaluate and select appropriate database technologies for different business scenarios                  | 1, 4, 5              |
| Design and build the database layer that powers analytics and reporting applications                    | 2, 5                 |
| Describe the landscape of modern database technologies, including cloud-hosted and NoSQL systems        | 5                    |

### **5.1 BBA Program Level Learning Goals**

1. Communicate ideas effectively in written and oral form.
2. Acquire quantitative analysis skills that can be used in managerial decision-making.

3. Be able to work effectively in a team.
4. Demonstrate appreciation of ethical and global issues in managerial decision-making.
5. Demonstrate competency in the core areas of business.

## 6 Required Materials

### 6.1 Course Materials

**No textbook purchase is required for this course.** The bookstore carries nothing for this class because there is nothing to buy. All course materials are provided by the instructor on Canvas:

- **Weekly Overview Pages:** the single starting point for each week
- **Pre-Lab Readings:** a short instructor-written read for each lab week: foundation concepts, a preview of the lab, and practice exercises
- **Weekly Notes:** the primary reference for the course, posted each week
- **Lab Handouts:** one per week (13 labs), with step-by-step instructions and the practice databases used in class
- **Practice Sets:** ungraded exercises posted weekly; the quiz samples them
- **Review Materials:** released before each exam

#### The Weekly Notes Are the Coverage Guarantee

In class we cover as much as time allows. The **weekly notes** are the complete record of what you are responsible for: if it is in the notes, it is fair game for labs, quizzes, exams, and interviews, whether or not we got to it in class. Read them every week.

### 6.2 Reference Readings (Free Open Textbooks)

Three free open textbooks back up the weekly notes. They are curated reference readings: use them when you want a second explanation, more examples, or extra practice. Nothing to buy, nothing to install.

| Title                                                          | Author                                                           | Where to Find It                                                        |
|----------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------|
| <i>Database Design, 2nd Edition</i>                            | Adrienne Watt,<br>BCcampus Open<br>Education                     | <a href="https://opentextbc.ca/dbdesign01">opentextbc.ca/dbdesign01</a> |
| <i>Mastering Relational Databases: From Models to Querying</i> | Libby Shoop,<br>Macalester College                               | <a href="https://runestone.academy">runestone.academy</a>               |
| <i>A Practical Introduction to Databases</i>                   | Christopher<br>Painter-Wakefield,<br>Colorado School of<br>Mines | <a href="https://runestone.academy">runestone.academy</a>               |

## 7 Technology Requirements

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This is a hands-on database course. You will write and run SQL in every class meeting, so bring your laptop to every session.

### 7.1 Windows or Mac?

Both Windows 11 and Mac OS machines will work for this course. Chromebooks and tablets are not suitable for the assignments in this course.

### 7.2 WIFI Connection on Campus

While on campus **DO NOT USE THE UMD-GUEST WIRELESS CONNECTION. USE THE EDUROAM connection.** Guest wireless connections do not allow file uploads and downloads and is generally much slower than the standard EDUROAM (secured) connection.

### 7.3 Required Software & Platforms

- **SQLite:** the database engine used in every lab. It is free, small, and runs on any laptop. Setup is part of Lab 1 in Week 1; installation instructions are on Canvas.
- **Canvas:** primary learning management system: [canvas.umn.edu](https://canvas.umn.edu).
- **Supabase (optional, project teams only):** teams that prefer hosted Postgres for their project may use a free Supabase account instead of SQLite. This is entirely optional; details in the Team Project section.

#### Important

**ALWAYS REFER TO CANVAS FIRST FOR OFFICIAL INSTRUCTIONS AND DEADLINES FOR ASSIGNMENTS AND QUIZZES.**

## 8 Grading Policy

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### 8.1 Grade Components and Weights

The course is graded on a **1000-point scale**. Your course percentage is simply your point total divided by 10.

| Component                                                                           | Points      | Weight       |
|-------------------------------------------------------------------------------------|-------------|--------------|
| <b>Exam 1</b> (Thu Oct 15, in class; covers Weeks 1–6)                              | <b>150</b>  | <b>15.0%</b> |
| <b>Exam 2</b> (two parts: Tue Dec 1 multiple choice + Thu Dec 3 SQL practical)      | <b>170</b>  | <b>17.0%</b> |
| <b>Weekly Labs</b> (13 lab reports $\times$ 25 pts; best 12 count)                  | <b>300</b>  | <b>30.0%</b> |
| <b>Weekly Quizzes</b> (13 offered $\times$ 5 pts; best 12 count)                    | <b>60</b>   | <b>6.0%</b>  |
| Individual stage (3 pts) + team stage (2 pts), every quiz                           |             |              |
| <b>Pre-Lab Checks</b> (10 $\times$ 3 pts, auto-graded)                              | <b>30</b>   | <b>3.0%</b>  |
| <b>Team Project</b>                                                                 | <b>140</b>  | <b>14.0%</b> |
| Milestone 1: ERD draft (checked in lab, Week 9)                                     | 20          | 2.0%         |
| Milestone 2: schema DDL + data loaded (checked in lab, Week 11)                     | 20          | 2.0%         |
| Milestone 3: query portfolio draft (checked in lab, Week 13)                        | 20          | 2.0%         |
| Final integrated build (due at the Week 15 dry-run)                                 | 80          | 8.0%         |
| <b>Presentation</b> (demo day, finals week; includes directed individual questions) | <b>100</b>  | <b>10.0%</b> |
| <b>Interviews</b>                                                                   | <b>50</b>   | <b>5.0%</b>  |
| Weekly micro-checks (individual)                                                    | 20          | 2.0%         |
| Individual interview (Weeks 8–10)                                                   | 30          | 3.0%         |
| <b>Total</b>                                                                        | <b>1000</b> | <b>100%</b>  |

**There is no extra credit in this course.** The slack is built in instead: your lowest lab and your lowest quiz are dropped automatically.

## 8.2 Grading Scale

| Grade | Range     | Description       |
|-------|-----------|-------------------|
| A     | 93-100%   | Excellent         |
| A-    | 90-92.9%  | Very Good         |
| B+    | 87-89.9%  | Good Plus         |
| B     | 83-86.9%  | Good              |
| B-    | 80-82.9%  | Good Minus        |
| C+    | 77-79.9%  | Satisfactory Plus |
| C     | 73-76.9%  | Satisfactory      |
| C-    | 70-72.9%  | Below Average     |
| D+    | 67-69.9%  | Poor Plus         |
| D     | 60-66.9%  | Poor              |
| F     | Below 60% | Failing           |

### **i** Note

**No rounding is applied to final grades.** Your course total (out of 1000) is converted directly to the percentage scale above.

## 8.3 Exams

### 8.3.1 Exam 1 (150 points): Thursday, October 15

Exam 1 covers Weeks 1–6: SQL foundations (SELECT through GROUP BY and HAVING, plus SQL functions) and ER modeling and schema design. It is taken in class, in person, **on paper**: you hand-write your answers, including the SQL. Handwritten queries are graded on logic and structure, not on perfect keyword spelling, so a small typo never sinks an answer. The Tuesday session that week (October 13) is a structured review lab (Lab 7, a normal 25-point lab), so Week 7 is review Tuesday, exam Thursday. Review materials come with the review lab, and part of it is done on paper so the handwritten format is familiar before exam day.

### 8.3.2 Exam 2 (170 points): Week 14, Two Parts

Exam 2 spans two class periods:

- **Part 1 (Tuesday, December 1), 70 points:** a multiple-choice sitting covering the full semester's concepts, with emphasis on Weeks 8–13
- **Part 2 (Thursday, December 3), 100 points:** a SQL practical, where you write and run real queries on your own machine. The practical carries more weight on purpose: writing working SQL is the skill this course exists to build

Review materials are released in Week 13, so your runway runs through Thanksgiving break.

### 8.3.3 Final Exam Period

**No traditional final exam.** The final exam period is **demo day**: live team presentations and demonstrations, with questions directed to individual members. Finals week is December 14–18; the exact slot for this section is set by the registrar and runs as a two-hour block, which gives every team room to present and take questions.

**Exact demo day date and time: to be announced once the registrar confirms this section's final exam period.**

## 8.4 Weekly Labs (300 points)

Every week has a hands-on lab (Lab 1 through Lab 13; Lab N lives in Week N), done in class, worth 25 points each. Your **best 12 of 13** lab scores count; the lowest is dropped. One bad week, or one missed week, costs you nothing.

- **Lab day is Thursday**, with four exceptions the schedule marks: the Week 7 review lab and the labs in the two one-day weeks (Weeks 9 and 13) happen on Tuesday, and Week 3's lab is a guided take-home (no class that Thursday).
- **The deliverable is a lab report:** a guided worksheet with your queries, your pasted results, and two or three short reasoning questions. It is designed to be finished during the lab session.
- **Grading is completion plus spot-checks.** I check for a complete, honest report and rerun a couple of your queries. Milestone checks and micro-checks happen in the room during the same time.

- **Submission:** turn in your report in class. The Canvas window stays open until the next class begins, in case you need to tidy up at home. Week 3's take-home report goes straight to Canvas by the same deadline.
- **The answer key is released after the report deadline**, so you always see a worked solution while the lab is fresh. Because the key is out, lab reports are not accepted late; the dropped lab is your safety net, and the excused absence policy covers documented emergencies.

### 8.5 Weekly Quizzes (60 points)

There are **13 quizzes offered**: the syllabus quiz in Week 1, then one quiz in each of Weeks 2–7 and 8–13; the Week 7 quiz is a review quiz taken during Tuesday's Exam 1 review lab. Your **best 12 count**, at 5 points each. Every quiz has the same two stages:

- **Stage 1: individual (3 points).** At the start of Tuesday's class you answer five or six short questions alone, on Canvas.
- **Stage 2: team (2 points).** Right after, your team huddles for five minutes and agrees on its answers. One paper answer slip per team, with every present member's name on it. I score the slips on the spot while the day's work begins, and everyone on the slip gets the same team points.

The quiz always samples the week's pre-lab and the ungraded practice sets, and at least one question reaches back to an earlier week. Prepared students walk in already knowing the material the quiz asks about.

**There are no makeup quizzes. Miss a week, that is your drop.** The best-12 rule absorbs one missed or bad week automatically; documented multi-week situations go through the excused absence policy.

The **Week 1 quiz is the syllabus quiz**, taken on Thursday, September 3, after we walk the syllabus together on day one. It checks that you personally read this document before graded work begins. It is the only quiz not on a Tuesday.

### 8.6 Pre-Lab Checks (30 points)

Ten weeks carry a short **Pre-Lab Check**: Weeks 2–6, 8, and 10–13. Each is worth 3 points, auto-graded on Canvas, and **due before Tuesday's class begins**. The questions come straight from that week's pre-lab reading.

- **Purpose:** confirm the read, so Tuesday starts fast and Thursday's lab needs no catch-up.
- **Hard deadline:** the check closes when class begins. No late submissions, no exceptions; the stakes are 3 points by design.
- **Do it yourself, without AI.** It is a personal reading check, and the quiz that follows samples the same material anyway.

Week 9 has a pre-lab reading but no graded check; it is the short fall break week.

## 8.7 Team Project (140 points)

You work in a team (teams of 4, with one team of 5 if the roster requires it) on one complete database lifecycle. Teams form on day one so the weekly quizzes can run, and stay provisional until add/drop settles at the end of Week 2: late adds join the smallest team, and I rebalance only if a drop leaves a team below three. The lifecycle: take a real domain, model it as an ERD, write the DDL, load the data, and deliver the query portfolio that answers the domain's questions.

**There is no application layer in this project.** No web app, no code beyond SQL. The project is the database itself, built well.

**Your client is real.** A honeypot server run by your instructor recorded 27 days of real attacks, and the data visualization class builds dashboards on the same data. The pipeline runs through you: the security class collected the data, this class models and builds the database layer, and the visualization class visualizes it. At the Week 8 kickoff your team claims one narrative track from the dataset (for example the VoIP toll fraud story or the IoT botnet story) and builds the analytical database that would power that track's dashboards.

### **i The spec is frozen on day one**

**The full project spec and every rubric are published on day one and do not change.** What you see at kickoff is exactly what gets graded in December: same milestones, same points, same rubric. No moving targets.

The three milestones are **checked live during lab**, in the room, on your screen. No upload ceremony, and feedback is immediate:

- **Milestone 1: ERD draft (20 pts).** Week 9 lab (Tuesday, October 27). Your team's draft ERD for its track, checked against the milestone checklist. Checks start in Week 9's lab; any team not reached that day is checked first thing in Week 10's lab, no penalty.
- **Milestone 2: schema DDL + data loaded (20 pts).** Week 11 lab (Thursday, November 12). Your CREATE scripts run without error and your track's data is loaded.
- **Milestone 3: query portfolio draft (20 pts).** Week 13 lab (Tuesday, November 24). A working draft of the queries and views your track's dashboard needs.
- **Final integrated build (80 pts).** Due **Thursday, December 10, at 2:00 PM**, when the Week 15 dry-run session begins. Your dry-run uses the build you submitted. Schema, constraints, loaded data, and the finished query portfolio, delivered as one working database. This is the piece with the full rubric, published at kickoff.

**If your team cannot be at a live check** (documented absence, or we simply run out of time that day), the check happens first thing in the next lab or at office hours within the week: same checklist, no penalty.

**Every milestone submission names which team member owned which part.** Roles stay visible all semester, and the interviews score each member individually, so your grade reflects your own work.

**Tools:** teams build in **SQLite** by default, the same tool used in every lab. A team may choose **Supabase hosted Postgres** instead if they prefer a hosted environment. Grading is identical either way; pick whichever your team likes.

**Data safety:** the dataset is sanitized for classroom use, and one rule is firm: **never interact with any IP address or file reference you find in the data.** Passive research only. Full safety notes ship with the project materials.

## 8.8 Presentation (100 points)

During finals week, each team presents its project and demonstrates the working database live: the track's story, the design decisions behind the schema, and the queries that power the analysis. Presentation day doubles as demo day for the class, and it is the culminating assessment of the course.

### Every member represents the whole project

During each presentation, questions are directed to individual team members at random. These are the questions any stakeholder would ask, and they are answered alone, without assistance from teammates. A member who is engaged with the full project and can speak to the team's work earns full credit. A member who cannot explain the project beyond their own portion, or whose engagement with the team's work is clearly limited, loses points individually. Scores can therefore differ within a team.

The presentation is graded live against a rubric published with the project spec on day one.

## 8.9 Interviews (50 points)

Understanding in this course is verified through conversation rather than surveillance. Two forms:

- **Weekly micro-checks (20 pts, individual).** Throughout the semester, during class and lab sessions, I select students at random for brief questions about the current work: a short, focused exchange about what is on your screen or what we just covered. Every student receives multiple opportunities across the semester, and your score reflects the overall pattern, never a single moment. No preparation is required beyond doing your own work; the protocol and rubric are posted on Canvas.
- **Individual interview (30 pts, Weeks 8–10).** A scheduled 8 to 10 minute one-on-one conversation during lab time, covering the SQL skills you have built and your part of the project plan. With a class this size there is time for everyone.

## 8.10 Grading Turnaround

Fast feedback is built into the course structure, not bolted on:

- **Pre-lab checks and the individual quiz stage:** auto-graded, scores available immediately
- **Team quiz slips:** scored in the room the same day
- **Lab reports:** graded within one week; the answer key is out even sooner
- **Project milestones and micro-checks:** scored live, in the room
- **Exams:** grades posted within one week
- **Final build, presentation, and interviews:** feedback within one week

## 9 Course Schedule

Class meets Tuesday and Thursday. We meet 2:00 PM to 3:15 PM in LSBE 265. There is no class on Thursday, October 29 (fall break) or Thursday, November 26 (Thanksgiving).

### **i** Standing weekly deadlines

These rules hold every week, so the table below only marks what is special: **Pre-Lab Check** due before Tuesday's class (in the ten weeks marked "Check"). **Quiz** at the start of Tuesday's class (Week 1: Thursday). **Lab report** turned in during lab; the Canvas window closes when the next class begins.

| Wk | Dates             | Topic and Lab                                                                                                                                     | Due / Checkpoints                                                                                                                                              |
|----|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Sep 1, 3          | Course setup, SQLite, first SELECT queries. Lab 1 Thu.                                                                                            | Teams form Tue (provisional until rosters settle, end of Week 2). <b>Syllabus quiz Thu</b> (in class).                                                         |
| 2  | Sep 8, 10         | SELECT and WHERE. Lab 2 Thu.                                                                                                                      | Check Tue. Quiz Tue.                                                                                                                                           |
| 3  | Sep 15, 17        | Aggregates and ORDER BY. <b>No class Thu Sep 17</b> (instructor traveling). Lab 3 releases Thursday with a guided walkthrough; do it on your own. | Check Tue. Quiz Tue.                                                                                                                                           |
| 4  | Sep 22, 24        | SQL functions. Lab 4 Thu.                                                                                                                         | Check Tue. Quiz Tue.                                                                                                                                           |
| 5  | Sep 29, Oct 1     | GROUP BY and HAVING. Lab 5 Thu.                                                                                                                   | Check Tue. Quiz Tue.                                                                                                                                           |
| 6  | Oct 6, 8          | ER modeling and schema design. Lab 6 Thu.                                                                                                         | Check Tue. Quiz Tue.                                                                                                                                           |
| 7  | Oct 13, 15        | Tue: Exam 1 review lab (Lab 7). Thu: <b>EXAM 1</b> (covers Weeks 1–6).                                                                            | <b>Exam 1, Thu Oct 15.</b> Review quiz Tue. No check this week.                                                                                                |
| 8  | Oct 20, 22        | JOINS, subqueries, CASE. Lab 8 Thu.                                                                                                               | Check Tue. Quiz Tue. <b>Project kickoff Tue:</b> teams claim tracks; spec and rubrics published. <b>Individual interviews begin</b> (during labs, Weeks 8–10). |
| 9  | Oct 27 (Tue only) | CASE and UNION consolidation. Lab 9 Tue. <i>No class Thu Oct 29: fall break.</i>                                                                  | Quiz Tue. <b>Milestone 1 (ERD draft) checked in lab Tue Oct 27.</b> Pre-lab posted, no graded check this week.                                                 |
| 10 | Nov 3, 5          | DML and DDL. Lab 10 Thu.                                                                                                                          | Check Tue. Quiz Tue. Individual interviews wrap up.                                                                                                            |

| Wk     | Dates                | Topic and Lab                                                                                  | Due / Checkpoints                                                                                                               |
|--------|----------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 11     | Nov 10, 12           | Views, transactions, window functions. Lab 11 Thu.                                             | Check Tue. Quiz Tue.<br><b>Milestone 2 (schema DDL + data loaded) checked in lab Thu Nov 12.</b>                                |
| 12     | Nov 17, 19           | CTEs, triggers, indexes. Lab 12 Thu.                                                           | Check Tue. Quiz Tue.                                                                                                            |
| 13     | Nov 24<br>(Tue only) | Normalization mini-lab (Lab 13).<br><i>No class Thu Nov 26: Thanksgiving.</i>                  | Check Tue. Quiz Tue.<br><b>Milestone 3 (query portfolio draft) checked in lab Tue Nov 24.</b> Exam 2 review materials released. |
| 14     | Dec 1, 3             | <b>EXAM 2</b> in two parts. No quiz, no lab.                                                   | <b>Tue Dec 1: multiple-choice sitting (70 pts). Thu Dec 3: SQL practical (100 pts).</b>                                         |
| 15     | Dec 8, 10            | Tue: query optimization. Thu: project work session and presentation dry-runs. No quiz, no lab. | <b>Final integrated build due Thu Dec 10, 2:00 PM, at the dry-run session.</b>                                                  |
| Finals | Dec 14–18            | <b>Demo day: live team presentations and demos, with directed individual questions.</b>        | <b>Slot to be announced (set by the registrar)</b>                                                                              |

**i This schedule is frozen**

The dates, points, and policies in this syllabus are set on day one and **deadlines will not move**. Plan your semester around this table with confidence. If a correction is ever needed, it will be announced on Canvas, and it will never move a deadline earlier.

## 10 Policies

### 10.1 Student Responsibilities

- Start each week from the weekly overview page on Canvas
- Read the pre-lab before Tuesday and the weekly notes as they post
- Bring your laptop to every class meeting
- Complete labs, checks, and project milestones on time
- Keep up with course announcements on Canvas
- Address grade concerns professionally via Canvas or office hours, not during class time

If you spot an error in a lab handout or the notes, say so in the “Quick Class Questions” thread. I will verify it and post a correction fast. Corrections never move a deadline earlier.

## 10.2 Deadlines and Late Work

The deadline rules are simple and they do not change during the semester:

- **No midnight deadlines.** Everything is due when class begins, and the final build deadline is at the same afternoon hour. Nothing is due at 11:59 PM.
- **Pre-Lab Checks:** close when Tuesday's class begins. No late submissions; each is only 3 points.
- **Quizzes:** taken in class. No makeups; the best-12 rule is the safety net. Miss a week, that is your drop.
- **Lab reports:** due when the next class begins. Because the answer key releases at the deadline, late lab reports are not accepted; the dropped lab absorbs one missed week.
- **Project milestones (M1–M3):** checked live in lab on the scheduled day. If your team cannot be there, arrange it with me ahead of time through the excused absence policy.
- **Final integrated build:** late submissions lose **10% per day** (counted in 24-hour blocks from the deadline), with a floor of 0.
- **Exams, the presentation, and interviews:** no late option without prior arrangement with the instructor.

## 10.3 Academic Integrity

While collaboration on learning concepts is encouraged, all submitted work must be individual unless explicitly designated as team work. Copying another student's queries or lab report, or submitting work that is not your own, is academic dishonesty and will be handled through university disciplinary procedures. In this course the interviews and micro-checks make ownership visible quickly: you will be asked to explain your own work, face to face, all semester.

## 10.4 Use of AI Tools (ChatGPT, Claude, Copilot, and others)

This course is designed for a world where AI tools exist, and you are encouraged to use them to learn.

### What is encouraged:

- Asking AI to explain a concept from the pre-lab or the weekly notes in a different way
- Using AI to generate extra practice questions, sample data, or query challenges
- Debugging: paste an error message or a query that returns the wrong rows and work through why
- Comparing approaches: ask for two ways to write a query, then figure out which is better and why

### Where the line is:

- Most of your grade comes from live, in-person work: exams, quizzes, interviews, micro-checks, milestone checks, and lab work done in class. In those settings you are on your own, and your own understanding is what gets graded.

- **Pre-Lab Checks are AI-free.** They are personal reading checks, done from the pre-lab, in your own head.
- If AI writes a query for you and you cannot explain it in a micro-check, the points you saved on the lab will cost you more in the interviews and on the exams.
- No AI tools or outside help during exams or quizzes.

There is no proctoring software in this course. The course design does that work instead: use AI freely to learn, because everything that carries the most points happens in the room, face to face.

## 10.5 Excused Absences

Documented emergencies, illness with a provider note, family emergencies, and university-approved travel are handled case by case. Contact the instructor as early as possible with documentation; approved requests result in an excused grade or an arranged alternative. Advance notification is required when possible, and the student is responsible for initiating the request. Complete university policy: <https://evcaa.d.umn.edu/excused-absences>

## 10.6 Attendance

This is an in-person course, and there is no separate attendance score. The quiz, the lab, the milestone checks, and the micro-checks all happen in the room, so showing up and doing the work is already how engagement is graded. Miss a week and the built-in drops absorb it: your lowest lab and lowest quiz do not count. The excused absence policy covers documented situations beyond that.

# 11 University Policy Statements

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The following policy statements apply to every UMD course. They are reproduced here in summary; the linked policies are authoritative. Please review them.

## 11.1 Students with Disabilities

It is the policy and practice of the University of Minnesota to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements (such as time-limited exams, inaccessible web content, or non-captioned videos), please notify me as soon as possible. Contact **Disability Resources at 218-726-6130** or visit [disability-resources.d.umn.edu](https://disability-resources.d.umn.edu). If you already have an approved accommodation letter, send it to me on Canvas Inbox during Week 1.

## 11.2 Other Accommodations

If you face medical, family, or other personal circumstances that may require temporary academic accommodations or flexibility during the term, please reach out to me as early as possible. I will work with you and the appropriate UMD office to identify reasonable adjustments. Conversations about accommodations remain confidential.

### 11.3 Care for Mental Health and Stress Management

If you feel any anxiety, pressure, or burnout during the term, please reach out: to me, or to UMD Health Services at **218-726-7913**. Mental health and stress management support is available through UMD Health Services, and I encourage you to use it.

#### Emergency Resources:

- The Birch Tree Center's Crisis line: **218-623-1800**
- Campus Police: **218-726-7000**
- Emergency: **911**

### 11.4 Academic Integrity

Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. Submitting another person's work or AI-generated text as your own original analysis, sharing exam questions, or any other form of academic dishonesty will result in zero credit on the affected assignment and a referral through standard university disciplinary procedures. See [the UMD Student Academic Integrity policy](#) for details.

### 11.5 Student Conduct Code

Appropriate classroom conduct (in the room and on Canvas discussions) promotes an environment of academic achievement and integrity. Disruptive behavior that substantially or repeatedly interrupts the instructor's ability to teach or other students' learning is prohibited. Students are expected to adhere to the [Board of Regents Student Conduct Code](#).

### 11.6 Teaching and Learning: Mutual Responsibilities

UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have mutual responsibility to ensure that the environment supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. See the [Instructor Responsibilities](#) and [Student Responsibilities](#) statements.

### 11.7 Final Examination Week

This course has no separate sit-down final exam. Its second exam, Exam 2, is given in class in two parts, **Tuesday, December 1** (multiple choice) and **Thursday, December 3** (SQL practical), in Week 14, so all sections of my fall courses sit their exams on aligned days and the last week of classes stays free for project work. Per UMD policy, the course's final graded component runs at the registrar's scheduled final examination time: our finals slot, a two-hour block, hosts **demo day**, the team presentations and live demonstrations that are the course's culminating assessment. See [the UMD Final Examinations policy](#) for details.

### 11.8 Sexual Harassment, Sexual Assault, Stalking, and Relationship Violence

The University is committed to taking swift and effective steps to end sexual harassment, sexual assault, stalking, relationship violence, and related retaliation, prevent their recurrence, and remedy their effects. Information and reporting options are at [sexual-assault.d.umn.edu](https://sexual-assault.d.umn.edu); full policy at [the Board of Regents policy](#).

## 11.9 Equity, Diversity, Equal Opportunity, and Affirmative Action

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. See the [Board of Regents Equity, Diversity, EO, and AA policy](#).

### 11.10 Academic Freedom and Responsibility

Academic freedom is the freedom, without institutional discipline or restraint, to discuss all relevant matters in the classroom, to explore all avenues of scholarship, research, and creative expression, and to speak or write on matters of public concern as well as on matters related to professional duties and the functioning of the University. See [the Board of Regents policy on Academic Freedom and Responsibility](#).

### 11.11 Use of Class Notes and Course Materials

Class notes are for personal study and the course community. Broadly disseminating class notes beyond the course community, or accepting compensation for taking and distributing class notes, is prohibited. See [the UMD course notes and materials policy](#).

### 11.12 Accessibility of Course Materials

All course materials in this class are designed to meet **WCAG 2.1 AA** accessibility standards: meaningful alt text on images, sufficient color contrast, proper heading structure, captions on any video content, and tagged PDFs. If you encounter a course material that is not accessible to you, contact me on Canvas Inbox and I will provide an accessible alternative.