Course Outline

WMDD 4921 — M01: Introduction to Database Technologies

Fall 2025

Course Format: mixed-mode (online and in person)

Credits: 3 Transfer Credit: For information, visit

bctransferguide.ca

Course Description, Prerequisites, and Corequisites:

Developers working in industry must contend with multiple database types and technologies. In this class, students are introduced to the fundamentals of relational and non-relational databases. Students write SQL statements as well as NoSQL programs to create and access databases. Students work on database projects as part of the data persistence layer to their web and mobile applications.

Prerequisites: Enrolled in the Program and have attained a minimum "C" grade in WMDD 4831

Learning Outcomes:

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

- Create relational and non-relational data models for a problem.
- Design a normalized database.
- Explain when to normalize and denormalize a data model
- Write syntactically correct and accurate SQL statements.
- Embed relational and non-relational database technology into a programming or web environment.

Instructor: Jordan Miller

Office: B019j Phone: (604) 323-5511 Email: jordanmiller@langara.ca

ext. 2083 (leave a message)

Office Hours: see Brightspace announcements



Textbook and Course Materials:

Note: This course may use an electronic (online) instructional resource that is located outside of Canada for mandatory graded class work. You may be required to enter personal information, such as your name and email address, to log in to this resource. This means that your personal information could be stored on servers located outside of Canada and may be accessed by U.S. authorities, subject to federal laws. Where possible, you may log in with an email pseudonym as long as you provide the pseudonym to me so I can identify you when reviewing your class work.

You are free to use your own computer to complete coursework instead of the lab computers on campus. However, you are responsible for maintaining your computer, software, and data; I am NOT able to provide tech support for your personal computer (and neither is our IT department). Extensions and other special exceptions will not be provided for hardware or software malfunctions.

You may be required to subscribe to a paid service for software development resources. I will try to choose the least expensive services that satisfy our requirements. You are responsible for all charges for your account and subscription, even when they are unexpected or result from accidental overages.

Assessments and Weighting:

Weekly activities:

	0	Weekly assignments:	20%
	0	Bi-weekly quizzes:	15%
	0	Two conferences:	4%
•	Midterm exam		20%
•	Final project		11%
•	Final exam		30%

Grading:

Letter	Percent%	GPA
A+	95-100	4.33
Α	90-94	4.00
A-	85-89	3.67
B+	80-84	3.33
В	75-79	3.00
B-	70-74	2.67
C+	65-69	2.33
C	60-64	2.00
C-	55-59	1.67
D	50-54	1.00
F	0-49	0.00



Detailed Course Schedule:

This schedule is approximate; dates and topics may change throughout the semester. Check Brightspace frequently for updates. Due dates of assignments and the exact dates and times of quizzes and exams will be posted on Brightspace.

Week	Topic
1	Introduction to data and databases; ER diagrams
2	Relational data model; data normalization
3	Introduction to SQL; basic SQL queries; selecting data
4	Ordering, nested queries, range, creating tables, constraints, inserting
5	Aggregate functions, joins, grouping
6	Integration with Node.js
7	Midterm Exam
8	Updating, deleting, importing data
October 25	Last day (before 2100 hours) to withdraw from regular semester courses.
9	NoSQL, MongoDB
10	MongoDB continued
11	Triggers, views, indexes, transactions
12	Project work
December 3	Final exam period. Do not schedule anything important during this time until
to 15	you've received your exam schedule from the college.

Policy

As a student at Langara, you are responsible for familiarizing yourself and complying with the following policies:

College Policies:

- Student Code of Conduct E1003
- Academic Integrity F1004
- Academic Standing Academic Probation and Academic Suspension E2008
- Appeal of Final Grade E2006
- Concerns about Instruction F1002
- Withdrawal from Courses and Deferred Standing E2011

Departmental/Course Policies:



Course Format: This is a mixed-mode course, which means part of it is done in person, and part is done online (using D2L Brightspace). You are responsible for checking the Brightspace course page at least once every day for important announcements and updates. As we only meet for a few hours per week, I strongly recommend attending office hours for help with assignments and projects.

Attendance: Attendance is required and I will record who is present at each session; however, attendance is NOT graded. If you miss a class, please review the Brightspace support materials and connect with a classmate to review their notes from the lesson. All quizzes and exams must be written in person, in the lab. These will be announced at least a few days in advance.

Conferences: You must meet with me TWICE during labs or my office hours for a brief review of your progress; the first conference can take place any time after the due date of assignment 2 (TBA). When you're ready, please approach me and say "I'd like to do a conference now." (Simply talking to me does not count as a conference.) I'll ask you questions about your work and you can ask for help with anything you want. The conferences could be a good way to get help with assignments, discussion questions, or reviewing past quizzes/exams. You can only get credit for one conference per week (although you can of course talk to me as much as you want at any time during the semester!)

Online Discussion Posts: each week I'll post a few questions on Brightspace for you to answer according to your own opinions, experiences, or research. You're encouraged to post your answers to help your classmates, but answers are not graded and posting answers is not mandatory. The topics of these questions will be covered on quizzes and exams, so it's recommended that you answer them even though they're not graded. If you're not sure about a question, I encourage you to ask me about it during a lab or office hours. These questions are part of the independent learning requirement for this mixed-mode course.

Late Submissions, Extensions, and Missed Exams: You may hand in any homework assignment up to 24 hours after the due date with a penalty of -10%. After 24 hours, the assigned grade will be 0.

Assignment due date extensions and quiz deferrals *will not be granted for any reason*, but the *two* weekly assignments and quizzes with the lowest grades will be dropped from your final grade, so you can miss two of each; these grades are dropped automatically, you don't need to ask. Grades that have been reduced due to academic misconduct will NOT be dropped.

Unlike missed assignments and quizzes, if you are not able to attend the **midterm exam** due to illness or an unexpected emergency, you must let me know before the exam and have the absence approved first; only the aforementioned reasons will be considered. If approved, your midterm exam grade will instead be calculated as the average of ALL your quiz grades (lowest grades are NOT dropped for this) and your final exam grade. The quizzes and final exam will each be weighted at 50%. If the absence is not approved, you will receive a grade of 0 on the midterm exam.



If you're not able to attend the **final exam** due to illness or an unexpected emergency, the college's policies on **Deferred Standing** apply; please read the following carefully: Policy and Request Form.

Illness Policies: If you are sick, do NOT come to the lab or office hours. You do not need special permission to miss a lab, and lab attendance is not graded. Masks are strongly recommend to prevent the spread of Covid-19 and other respiratory viruses. I will keep the door and windows open to increase air circulation in the lab; if you're sensitive to cold, please consider wearing a jacket, especially during exams when seating is assigned. I will maintain some distance from you when helping you in the lab; please increase the size of code on your screen so I can easily read it from far away.

Exams and Grading: in order to receive a grade in the course, you MUST write the final exam; otherwise you will receive a grade of N (No Credit).

To receive a grade of C or greater, the weighted average of your midterm exams and final exam grades must be at least 50%.

If you have a question or concern regarding an assignment grade, please contact the instructor (Jordan) directly. DO NOT contact the marker or lab assistant. Grades are assigned based the merit of work done in the class and cannot be negotiated for any reason. However, I urge you to let me know if any mistakes have been made. I will investigate, and my decision will be final. Attempts to negotiate grades for any other reason will be referred to Langara's academic conduct office.

Generative AI Tools: generative AI tools such as conversational chatbots, AI coding IDEs, etc. are permitted in this course with the following provisos and caveats:

- When you use generative AI, you must provide thorough and complete documentation of the process, including: which programs you used; which APIs were used; a history of all prompts; supplementary files used for workflows, context, and instructions; documentation of edits to code you made by hand; etc. The documentation must be thorough enough that I could reconstruct the process myself and get similar results.
 - Failure to do so will be considered plagiarism, as there's no way for me to know if you did the work yourself.
- You are responsibly for knowing all the material covered in the course, including how to write all the necessary code. Quizzes and exams will be hand-written on paper without any electronic assistance, so you will be tested on this.
- Generative AI is often wrong, so I strongly recommend that you treat its output with suspicion and verify everything independently.
- I will not help you debug code generated by AI except by providing the most general, high-level advice. If you are unable to debug this code, I recommend that you go back to writing the code yourself, unassisted by AI. I will happily help you debug code you've written yourself.
 - Falsely claiming to have written code that was produced by AI will be considered plagiarism and reported to the college.



Academic Integrity: Please familiarize yourself with Langara's academic integrity policies. Be aware of the following:

- Consulting online resources (YouTube tutorials, W3Schools, MDN, etc.) or getting help from friends and classmates is encouraged. However, what you submit for evaluation *must be your own work*. This means that you must have written the code yourself and understand it well enough to explain it or reproduce it on the spot. I may ask you to prove that you created the work yourself.
- Using AI-based tools for generating code, written answers, or images is permitted according to the rules in the previous section. Failure to adequately disclose and document your process will be considered plagiarism.
- Do not share your work with classmates:
 - Do not send files to classmates or accept files from classmates;
 - If another student asks you to share your work, please tell me immediately.
 - o Do not copy work from another person's screen or allow them to copy your screen;
 - Be aware that if another student somehow obtains your work, even by accident or without your knowledge or permission, you will still be responsible for cheating. Protect your work.
- Do not copy code or other assets from any source without permission from the instructor. If you do use a resource, you must include a reference with a link to the source. Clearly indicate the file names, line numbers, and any other information necessary for me to see where the assets were used; it must be obvious to me which work was created by you and which was borrowed from another source.
- Do not share materials from the course; do not post course materials on the web.

If cheating or plagiarism is discovered, I will submit a report to the college and you will receive a grade of 0. All cases will be reported; there are no warnings. (Consider this to be the warning!) Makeup assignments or exams will not be given.

