

DATA:4610:0EXW Data Acquisition and Management

The University of Iowa
The College of Liberal Arts and Sciences
Fall 2025

Course meeting time and place: Monday & Wednesday, 5:00-6:15 PM on Zoom
Department of Statistics and Actuarial Science

Instructor: Erin Post

Email: erin-post@uiowa.edu

Student drop-in hours: Virtual Office Hours are held Mondays from 6:30-8 PM
Thursdays from 5-6:30 PM via the Zoom links on ICON. Students who are unable to
attend these hours are encouraged to make an appointment by emailing me.

Departmental Executive Officer (DEO)/Department Chair:

Kung-Sik Chan, 241 SH, kung-sik-chan@uiowa.edu

Student Complaints

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the DEO (Chair) of the department, school or program offering the course. Sometimes students will be referred to the department or program's Director of Undergraduate Studies (DUS) or Director of Graduate Studies (DGS).

Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level. Graduate students should contact the [CLAS Graduate Affairs Manager](#) when additional support is needed.

Course's College (Administrative Home)

For undergraduate courses

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

For graduate courses

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the policies and procedures for its courses. Graduate students, however, must adhere to the [academic deadlines set by the Graduate College](#).

Drop Deadline for this Course

You may drop an individual course before the drop deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course [here](#). When you

drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. To discuss how dropping (or staying in) a course might affect your academic goals, please contact your Academic Advisor. Directions for adding or dropping a course and other registration changes can be found on the [Registrar’s website](#). Undergraduate students can find policies on dropping CLAS courses [here](#). Graduate students should adhere to the [academic deadlines](#) and policies set by the Graduate College.

UI Email

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community. For the privacy and the protection of student records, UI faculty and staff can only correspond with UI email addresses.

Description of Course

This course provides a comprehensive introduction to Structured Query Language (SQL) with a strong emphasis on data manipulation and organization. Students will learn the fundamentals of relational databases, master essential SQL commands for data retrieval and modification, and explore advanced techniques for data cleaning, wrangling, and analysis. The course integrates practical exercises and real-world case studies to prepare students for effective data handling and insight generation using SQL, including practice with common SQL interview questions and leveraging large language models (LLMs) for code improvement.

Learning Outcomes

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

- Understand the principles of relational database design and normalization.
- Write effective SQL queries for data extraction, filtering, and sorting.
- Perform data aggregation, summarization, and statistical analysis using SQL.
- Apply advanced SQL techniques for data cleaning, transformation, and restructuring.
- Utilize subqueries, Common Table Expressions (CTEs), and window functions for complex data manipulation.
- Connect SQL databases with programming languages like Python for data workflows.
- Use LLM resources like ChatGPT, Cursor, and Gemini to troubleshoot and improve the flow of their code

Textbooks/Materials

Lecture notes and example code files will serve as the primary instructional materials for this course. We will also utilize optional readings from the two books listed below.

Students may access both books free of charge through the UI Library system and SpringerLink. See download instructions on ICON.

Simon, M. (2023). *Getting Started with SQL and Databases: Managing and Manipulating Data with SQL*. Apress.

Simon, M. (2023). *Leveling Up with SQL: Advanced Techniques for Transforming Data into Insights*. Apress.

Course ICON site

To access the course site, log into [Iowa Courses Online \(ICON\)](#) using your Hawk ID and password.

Grading System

This course will utilize a plus-minus grading system. A tentative grading scale is below. Deviations to this scale may be made at the instructor's discretion in such a way as to benefit students.

Final grades will be awarded based on the following ranges:

A	B	C	D	F
A+ >98%	B+ >87%	C+ >77%	D+ >67%	F <60%
A >93%	B >83%	C >73%	D >63%	
A- >90%	B- >80%	C- >70%	D- >=60%	

Course Grades

Final grades will be assessed based on your performance in the following activities: Homework (60%), Weekly Quizzes (5%), Mock Interviews (15%), Final Project (20%).

Homework: To ensure students are practicing and understanding the course material, weekly homework assignments will be given. These assignments will cover the topics discussed in the lectures and require applying the concepts learned. There will be a total of approximately 13 homework assignments, with roughly one assignment due each week. Each homework assignment will be worth 20 points. Late submissions will be accepted up to 3 days past the due date and will incur a 10% penalty per day.

Quizzes: Brief quizzes will be given weekly either as an in-class exercise or a short follow-up to lecture material. These are intended to ensure that students are keeping up with course material. The cumulative total of all homework assignments will account for 5% of the final grade. Late submissions will not be accepted, but the lowest score will be dropped.

Mock Interviews: We will include 3 mock “live coding” interviews throughout the semester. These will take place during normal class time either one-on-one with the instructor or by having students submit their responses via video. These are designed to give students experience talking through their thought processes and coding approaches. Each interview will account for 5% of the overall grade for a cumulative total of 15%.

Final Project: Each student will complete a final project that highlights the learning objectives from this course or expands their knowledge of a related topic. We will discuss the project specifics in greater detail during the semester. Project proposals will be due the week before Thanksgiving and final projects will be due on the last day of class. Each student should plan to spend roughly 10 hours on their project code and final report. The project will account for 20% of the final grade.

Attendance and Accommodations

Absences from Class

University regulations require that students be allowed to make up examinations which have been missed due to illness, religious holy days, military service obligations, including service-related medical appointments, jury duty, or other unavoidable circumstances or other university-sponsored activities. Students should work with their instructors regarding making up other missed work, such as assignments, quizzes, and classroom attendance.

Absences for Religious Holy Days

The university is prepared to make reasonable accommodations for students whose religious holy days coincide with their classroom assignments, test schedules, and classroom attendance expectations. Students must notify their instructors in writing of any such religious holy day conflicts or absences within the first few days of the semester or session, and no later than the third week of the semester. If the conflict or absence will occur within the first three weeks of the semester, the student should notify the instructor as soon as possible. See [Policy Manual 8.2 Absences for Religious Holy Days](#) for additional information.

Absences for Military Service Obligations

Students absent from class or class-related requirements due to U.S. veteran or U.S. military service obligations (including military service–related medical appointments, military orders, and National Guard Service obligations) shall be excused without any grading adjustment or other penalty. Instructors shall make reasonable accommodations to allow students to make up, without penalty, tests and assignments they missed because of veteran or military service obligations. Reasonable accommodations may include making up missed work following the service obligation; completing work in advance; completing an equivalent assignment; or waiver of the assignment without penalty. In all instances, students bear the responsibility to communicate with their instructors about such veteran or military service obligations, to meet course expectations and requirements.

Accommodations for Students with Disabilities

The University is committed to providing an educational experience that is accessible to all students. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through [Student Disability Services](#) (SDS). SDS is responsible for making [Letters of Accommodation \(LOA\)](#) available to the student. **The student must provide an LOA to the instructor as early in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which an accommodation is sought may not be accommodated.** The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide. Additional information can be found on the [SDS website](#).

Other Expectations of Student Performance

Free Speech and Expression

The University of Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We are committed to open inquiry, vigorous debate, and creative expression inside and outside of the classroom. Visit the [Free Speech at Iowa website](#) for more information on the university's policies on free speech and academic freedom.

Non-discrimination Statement

The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, creed, color, religion, national origin, age, sex, pregnancy (including childbirth and related conditions), disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, or associational preferences. The university also affirms its commitment to providing equal opportunities and equal access to university facilities. For additional information on nondiscrimination policies, contact the Senior Director, Office of Civil Rights Compliance, the University of Iowa, 202 Jessup Hall, Iowa City, IA 52242-1316, 319-335-0705, ui-ocrc@uiowa.edu. Although not required, students have the option to share their pronouns and chosen/preferred names in class and through [MyUI](#). Instructors and advisors can find information about a student's chosen/preferred name in MyUI.

Classroom Expectations

Students are expected to comply with University policies regarding appropriate classroom behavior as outlined in the [Code of Student Life](#). While students have the right to express themselves and participate freely in class, it is expected that students will behave with the same level of courtesy and respect in the virtual class setting (whether asynchronous or synchronous) as they would in an in-person classroom. Failure to follow behavior expectations as outlined in the [Code of Student Life](#) may be addressed by the

instructor and may also result in discipline under the [Code of Student Life](#) policies governing E.5 Disruptive Behavior or E.6 Failure to Comply with University Directive.

Class Recordings

Some of the sessions in this course will be recorded or live-streamed. Such recordings/streaming will only be available to students registered for this class. These recordings are the intellectual property of the instructor, and they may not be shared or reproduced without the explicit, written consent of the instructor. Further, students may not share these sessions with those not in the class or upload them to any other online environment. Doing so would be a breach of the Code of Student Conduct, and, in some cases, a violation of state and federal law, including the Federal Education Rights and Privacy Act (FERPA).

The unauthorized video or audio recording of academic activities (e.g., lectures, course discussions, office hours, etc.) by a student is prohibited. Students with a reasonable accommodation for recording approved by Student Disability Services should notify each instructor and provide the Letter of Accommodation prior to using the accommodation. A student may record classroom activities with prior written permission from the instructor and notice to other students in the class that audio or video recording may occur. Any and all classroom recording must be for personal academic use only. The distribution, sharing, sale, or posting of recordings on the internet (including social media), in whole or in part, is prohibited and doing so may be a violation of the Code of Student Life and/or state or federal privacy, copyright, or other laws.

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the [college's standards of academic honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#). Graduate academic misconduct must be reported to the Graduate College according to Section F of the [Graduate College Manual](#).

Students are encouraged to discuss homework assignments and course materials with other students and may work collaboratively unless explicitly told otherwise. However, every student is expected to turn in their own code and associated writeup each week.

Artificial Intelligence (AI) Policy

Students may use AI to assist them with debugging or checking their code. However, using AI to fully generate code or assignments is considered misuse of technology and is hereby banned.

Calendar of Course Assignments and Exams

Assignments will be due weekly on Friday.

Our three Mock Interviews will take place during class on: 9/17, 10/15, 11/12.

Project Proposals will be due on Friday 11/21.

Final Project reports are due on Friday 12/12.

Student Support Resources and Related Policies

Academic Support for this Course

Students are encouraged to attend instructor office hours as their first line of support for this course and discuss any additional needs with her at that time.

Mental Health

Students are encouraged to be mindful of their mental health and seek help as a preventive measure or if feeling overwhelmed and/or struggling to meet course expectations. Students are encouraged to talk to their instructor for assistance with specific class-related concerns. For additional support and counseling, students are encouraged to contact University Counseling Service (UCS). Information about UCS, including resources and how to schedule an appointment, can be found at counseling.uiowa.edu. Find out more about UI mental health services at: mentalhealth.uiowa.edu.

Basic Needs and Student Support

It can be difficult to maintain focus and be present if you are experiencing challenges with meeting basic needs or navigating personal crisis situations. The Office of the Dean of Students can help. Contact us for one-on-one support, identifying options, and to locate and access basic needs resources (such as food, rent, childcare, etc.).

Student Care and Assistance

132 IMU

dos-assistance@uiowa.edu

319-335-1162

Basic Needs info:

- [Food Pantry at Iowa](#)
- [Clothing Closet](#)
- [Basic Needs and Support Resources](#)

Sexual Harassment/Sexual Misconduct and Supportive Measures

The University of Iowa prohibits all forms of sexual harassment, sexual misconduct, and related retaliation. The [Policy on Sexual Harassment and Sexual Misconduct](#) governs actions by students, faculty, staff and visitors. Incidents of sexual harassment or sexual misconduct can be reported to the [Office of Civil Rights Compliance](#) or to the [Department of Campus Safety](#). Students impacted by sexual harassment or sexual misconduct may be eligible for academic supportive measures and can learn more by [contacting the Office of Civil Rights Compliance](#).

Information about confidential resources and videos explaining these resources can be found on the [Office of Civil Rights Compliance website](#).

Conflict Resolution

The Office of the Ombudsperson is a confidential, impartial, informal, and independent resource for any member of the university community with a problem or concern. The Office of the Ombudsperson offers a safe place to discuss conflicts or concerns. Students are encouraged to reach out for assistance. The office will brainstorm with students to help identify options, answer any questions, and provide referrals to other offices as appropriate. More information about the Office of the Ombudsperson, including how to schedule an appointment, can be found at ombudsperson.org.uiowa.edu.