



Prescription

The course addresses fundamental principles underlying databases and database management systems. It covers the structure and principles of the relational data model, including SQL, and the principled design of the relational database schema. It also addresses issues in database transaction procession, concurrency control, recovery, and the complexity of query processing.

Course learning objectives

Students who pass this course should be able to:

1. Demonstrate understanding of the principles of database systems generally and especially the relational database model.
2. Set up, query, and update a relational database using interactive SQL and using a transaction program written in Java.
3. Apply database principles, including data integrity and normalisation principles, and common trade-offs in designing a relational database.
4. Apply principles and common trade-offs in relational database query optimization.
5. Explain the basic principles of database concurrency control and recovery and implement them within a transaction program.
6. Explain the basic principles of NoSQL databases.

Course content

2022: The course is primarily offered in-person, and there are components such as tests, labs, tutorials, and marking sessions which require in-person attendance. There will be remote alternatives for all the components of the course, but these are only available to students studying from outside the Wellington region. The remote option for tests will use a Zoom-based system for online supervision of the tests.

Students taking this course remotely must have access to a computer with camera and microphone and a reliable high speed internet connection that will support real-time video plus audio connections and screen sharing. Students must be able to use Zoom; other communication applications may also be used. A mobile phone connection only is not considered sufficient. The computer must be adequate to support the programming required by the course: almost any modern windows, macintosh, or unix laptop or desktop computer will be sufficient, but an Android or IOS tablet will not.

Withdrawal from Course

Withdrawal dates and process:

<https://www.wgtn.ac.nz/students/study/course-additions-withdrawals>

Lecturers

Dr Hui Ma (Coordinator)

hui.ma@vuw.ac.nz 04 463 5657

CO 259 Cotton Building (All Blocks), Gate 7, Kelburn Parade, Kelburn

Teaching Format

This course will be offered in-person and online. For students in Wellington, there will be a combination of in-person components and web/internet based resources. It will also be possible to take the course entirely online for those who cannot attend on campus, with all the components provided in-person also made available online.

During the trimester there will be three lectures per week. Some lecture times will be used for tutorials.

Student feedback

Student feedback on University courses may be found at:

www.cad.vuw.ac.nz/feedback/feedback_display.php

Dates (trimester, teaching & break dates)

- Teaching: 28 February 2022 - 03 June 2022
- Break: 11 April 2022 - 24 April 2022
- Study period: 06 June 2022 - 09 June 2022
- Exam period: 10 June 2022 - 25 June 2022

Class Times and Room Numbers

28 February 2022 - 10 April 2022

- **Monday** 15:10 - 16:00 – LT122, Cotton, Kelburn
- **Wednesday** 14:10 - 15:00 – LT002, Hugh Mackenzie, Kelburn
- **Friday** 14:10 - 15:00 – LT002, Hugh Mackenzie, Kelburn

25 April 2022 - 05 June 2022

- **Monday** 15:10 - 16:00 – LT122, Cotton, Kelburn
- **Wednesday** 14:10 - 15:00 – LT002, Hugh Mackenzie, Kelburn
- **Friday** 14:10 - 15:00 – LT002, Hugh Mackenzie, Kelburn

Other Classes

There will be helpdesk sessions starting in week 2 in one of the school labs - details to be announced.

Set Texts and Recommended Readings

Required

The textbook for SWEN 439 ([available from Vic Books](#), or you can seek out alternate options or e-books from any publisher or supplier available to you) is:

- R. Elmasri and S. Navathe, *Fundamentals of Database Systems; 6th/7th edition*, Pearson/Addison Wesley, 2014/2015.

Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- achieve at least 40% of the overall marks for projects and assignments (i.e. 40%*70 marks), to demonstrate achievement of all the CLOs of the course.
- achieve at least a **D** grade for the exam.

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

Assessment

This course will be assessed through assignments, projects and a exam. The exam will be held in the assessment period of the trimester.

The assessment weights shown below are based on the assumption that we can do the exam in-person. If there is a lockdown during the exam the weight of the exam will be reduced from 30% to 20%, and the deducted 10% will be added to the weights of Assignment1-3, and Project 1-2.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Assignment 1	Week 5	CLO: 1	15%
Assignment 2	Week 8	CLO: 5	5%
Assignment 3	Week 11	CLO: 4	5%
Project 1	Week 7	CLO: 2	20%
Project 2	Week 12	CLO: 3,6	10%
Essay		CLO:	15%
Exam		CLO: 1,2,3,4,5,6	30%

Extensions

Approval to submit assignments and projects late without penalty will only be granted in exceptional circumstances whenever possible arranged prior to the due date. Medical and other excuses may be accompanied by a doctor's certificate.

Submission & Return

Unless otherwise instructed, assignments may be submitted via the School's electronic submission system or SWEN 439 assignment box on level 2 of the Cotton Building, and projects should be submitted via the electronic submission system. Marks and comments will be returned through the ECS marking system or via the course web pages.

Workload

In order to maintain satisfactory progress in SWEN 439, you should plan to spend an average of 10 hours per week on this paper, which includes attending lectures, solving homework assignments, doing practical work, additional reading, and reviewing lecture material.

Teaching Plan

See: https://ecs.wgtn.ac.nz/Courses/SWEN439_2022T1/LectureSchedule

Communication of Additional Information

All online material for this course can be accessed at https://ecs.wgtn.ac.nz/Courses/SWEN439_2022T1

Links to General Course Information

- Academic Integrity and Plagiarism: <https://www.wgtn.ac.nz/students/study/exams/integrity-plagiarism>
- Academic Progress: <https://www.wgtn.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <https://www.wgtn.ac.nz/students/study/dates>
- Grades: <https://www.wgtn.ac.nz/students/study/progress/grades>
- Special passes: Refer to the Assessment Handbook, at <https://www.wgtn.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>
- Statutes and policies, e.g. Student Conduct Statute: <https://www.wgtn.ac.nz/about/governance/strategy>
- Student support: <https://www.wgtn.ac.nz/students/support>
- Students with disabilities: https://www.wgtn.ac.nz/st_services/disability/
- Student Charter: <https://www.wgtn.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <https://www.wgtn.ac.nz/study/apply-enroll/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>
- University structure: <https://www.wgtn.ac.nz/about/governance/structure>
- VUWSA: <http://www.vuwsa.org.nz>

Offering CRN: [18598](#)

Points: 15

Prerequisites: 60 300-level pts from COMP, NWEN, SWEN

Restrictions: SWEN 304

Duration: 28 February 2022 - 26 June 2022

Starts: Trimester 1

Campus: Kelburn