

SWEN304 (2018) - Database System Engineering

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 processing, concurrency control, recovery, and the complexity of query processing.

Course learning objectives

Students who pass this course will be able to:

1. Demonstrate understanding of the principles of database systems generally and the relational database model specifically;
2. Set up, query, and update a relational database using interactive SQL;
3. Set up, query, and update a relational database using a transaction program written in Java;
4. Explain the basic principles and common trade-offs in designing a relational database, and to design it;
5. Explain the basic principles and common trade-offs in relational database query optimization;
6. Explain the basic principles of database concurrency control and recovery, and implement them within a transaction program.

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers

Hui Ma (Coordinator)

hui.ma@vuw.ac.nz

04 4635657

259 Cotton, Kelburn

Teaching Format

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: 05 March 2018 - 08 June 2018
- Break: 23 April 2018 - 27 April 2018
- Study period: 11 June 2018 - 14 June 2018
- Exam period: 15 June 2018 - 04 July 2018

Class Times and Room Numbers

05 March 2018 - 25 March 2018

- **Thursday** 16:10 - 17:00 – LT301, New Kirk, Kelburn

05 March 2018 - 01 April 2018

- **Monday** 16:10 - 17:00 – LT301, New Kirk, Kelburn
- **Tuesday** 16:10 - 17:00 – LT301, New Kirk, Kelburn

02 April 2018 - 22 April 2018

- **Thursday** 16:10 - 17:00 – LT301, New Kirk, Kelburn

09 April 2018 - 22 April 2018

- **Monday** 16:10 - 17:00 – LT301, New Kirk, Kelburn
- **Tuesday** 16:10 - 17:00 – LT301, New Kirk, Kelburn

30 April 2018 - 10 June 2018

- **Monday** 16:10 - 17:00 – LT301, New Kirk, Kelburn
- **Tuesday** 16:10 - 17:00 – LT301, New Kirk, Kelburn
- **Thursday** 16:10 - 17:00 – LT301, New Kirk, Kelburn

Other Classes

There will be helpdesk sessions starting in week 3 in one of the school labs - details to be announced.

Set Texts and Recommended Readings

Required

The textbook for SWEN 304 is:

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

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.

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 final examination.

Assignment 1	Week 5	CLO: 1	10%
Assignment 2	Week 8	CLO: 5	5%
Assignment 3	Week 11	CLO: 4	5%
Project 1	Week 7	CLO: 2	10%
Project 2	Week 12	CLO: 3,6	10%
Final Examination (2 hours)		CLO: 1,2,3,4,5,6	60%

Penalties

Any assignment or project submitted after the due date will be penalized at the rate of 5% per day (a weekend counts as one day). Assignments that are more than one week late will not be marked.

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 SWEN 304 assignment box on level 2 of the Cotton Building or the School's electronic submission system, 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 304, 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.victoria.ac.nz/Courses/SWEN304_2018T1/LectureSchedule

Communication of Additional Information

The main means of communication outside of lectures will be the SWEN 304 web area at https://ecs.victoria.ac.nz/Courses/SWEN304_2018T1/. There you will find, among other things, this document, the lecture schedule and assignment handouts, and the SWEN 304 Forum. The forum is a web-based bulletin board system. Questions and comments can be posted to the forum, and staff will read these posts and frequently respond to them.

Links to General Course Information

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

Offering CRN: [17186](#)

Points: 15

Prerequisites: COMP 261 or SWEN 221; ENGR 123 or MATH 161

Duration: 05 March 2018 - 04 July 2018

Starts: Trimester 1

Campus: Kelburn

