

SWEN304 (2017) - 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 procession, concurrency control, recovery, and the complexity of query processing.

Course learning objectives

Students who pass this course will be able to:

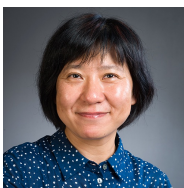
1. Demonstrate understanding of the principles of database systems generally and the relational database model specifically;
2. Set up, query, and update a relational database using interactive SQL;
3. Design stored procedures and triggers in a relational database system;
4. Set up, query, and update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

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers



Hui Ma (Coordinator)

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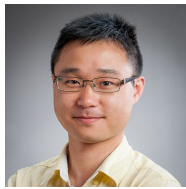


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Yi Mei

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Teaching Format

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

Dates (trimester, teaching & break dates)

- Teaching: 17 July 2017 - 20 October 2017
- Break: 28 August 2017 - 08 September 2017
- Study period: 24 October 2017 - 26 October 2017
- Exam period: 27 October 2017 - 18 November 2017

Class Times and Room Numbers

17 July 2017 - 27 August 2017

- **Monday** 15:10 - 16:00 – LT323, Hunter, Kelburn
- **Tuesday** 15:10 - 16:00 – LT323, Hunter, Kelburn
- **Thursday** 15:10 - 16:00 – LT323, Hunter, Kelburn

11 September 2017 - 22 October 2017

- **Monday** 15:10 - 16:00 – LT323, Hunter, Kelburn
- **Tuesday** 15:10 - 16:00 – LT323, Hunter, Kelburn
- **Thursday** 15:10 - 16:00 – LT323, Hunter, Kelburn

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:

- To pass SWEN 304 a student must achieve at least 40% of all 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 internally and externally assessed through assignments, projects and final examination.

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|-----------------------------|---------|--------------------|-----|
| Assignment 1 | Week 4 | CLO: 1 | 5% |
| Assignment 2 | Week 7 | CLO: 6 | 5% |
| Assignment 3 | Week 8 | CLO: 3 | 5% |
| Assignment 4 | Week 11 | CLO: 5 | 5% |
| Project 1 | Week 6 | CLO: 2 | 10% |
| Project 2 | Week 12 | CLO: 4,7 | 10% |
| Final Examination (2 hours) | | CLO: 1,2,3,4,5,6,7 | 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). Approval to submit assignments and projects late without penalty will only be granted in exceptional circumstances and if the arrangement is made prior to the due date. Any medical excuse must be accompanied by a doctor's certificate.

Extensions

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). Approval to submit assignments and projects late without penalty will only be granted in exceptional circumstances and if the arrangement is made prior to the due date. Any medical excuse must be accompanied by a doctor's certificate. Assignments that are more than one week late will not be marked.

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 at least 10-12 hours per week on this paper, which includes attending lectures, solving homework assignments, doing practical work, additional reading, and reviewing lecture material.

Teaching Plan

Communication of Additional Information

The main means of communication outside of lectures will be the SWEN 304 web area at http://ecs.victoria.ac.nz/Courses/SWEN304_2017T2/. 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: <http://www.victoria.ac.nz/students/study/exams/integrity-plagiarism>
- Academic Progress: <http://www.victoria.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <http://www.victoria.ac.nz/students/study/dates>
- Grades: <http://www.victoria.ac.nz/students/study/progress/grades>
- Special passes: Refer to the Assessment Handbook, at <http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>

- Statutes and policies, e.g. Student Conduct Statute: <http://www.victoria.ac.nz/about/governance/strategy>
- Student support: <http://www.victoria.ac.nz/students/support>
- Students with disabilities: http://www.victoria.ac.nz/st_services/disability/
- Student Charter: <http://www.victoria.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <http://www.victoria.ac.nz/study/apply-enrol/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>
- University structure: <http://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;

Restrictions: COMP 302

Duration: 17 July 2017 - 19 November 2017

Starts: Trimester 2

Campus: Kelburn