

COSC265 Relational Database Systems – Course Outline

Dr Tanja Mitrovic - Course Coordinator
June 2019

Course Aims

The course deals with data models and database systems and has been designed to enable you to understand the theoretical basis of databases and be able to apply that knowledge in developing and using relational databases. The lectures are organized around the database design lifecycle, while in the labs students go through the process of developing small databases from given requirements. This course is a prerequisite for SENG365 (Web Computing Architectures).

Lectures, Labs and Lecturers

There will be three lectures per week (times to be announced), which will be given by Prof Tanja Mitrovic (email tanja@cosc.canterbury.ac.nz) and Dr Miguel Morales (miguel.morales@canterbury.ac.nz). Labs will be held in CSSE labs in the Jack Erskine building. Please check your timetable for location of tutorials.

Prerequisites: COSC121 or INFO125

Assessment

| Type | Worth | Date |
|-----------------------------------|-------|---------------------------|
| Assignment | 25% | 23.8.2019, 5pm |
| Quizzes | 5% | in weeks 4 and 6 |
| Lab Test | 20% | 3 October, 5-7pm or 7-9pm |
| Final exam (closed book, 2 hours) | 50% | TBA |

No assignments will be accepted after the drop dead date (i.e. a week after the assignment is due). The penalty for the late submission of an assignment will be an *absolute* deduction of 15% of the maximum possible mark.

In order to pass a course you must meet two requirements:

- The university has adopted a common scale for converting marks to grades. According to this scale, an average mark of 50% is sufficient to pass the course (i.e. to achieve a C-), with an average mark of 55% a C grade is achieved and so forth. We apply this conversion scale to the average marks students achieve over all assessment items.
- You must achieve an average mark of at least 45% on invigilated assessment items.

Marks are sometimes scaled to achieve consistency between courses from year to year.

Required text

Fundamentals of Database Systems (7th edition), Ramez Elmasri & Shamkant Navathe, Addison-Wesley, 2017. Previous editions of the same textbook are also suitable.
The COSC265 lecture notes and all additional material will be available via Learn.

Important documents

COSC265 handouts will be available in Learn. Notices about this course will be posted to the course forum in the Learn system (learn.canterbury.ac.nz). CSSE students will also be made members of a class called "CSSE Notices", where general notices will be posted that apply to all classes (such as information about building access or job opportunities).

There are several important documents available online about departmental regulations, policies and guidelines at the following site. We expect all students to be familiar with these. <http://www.cosc.canterbury.ac.nz/policy/>

Tentative lecture/lab outline

| Week | Lecture topic | Lab/Tutorial |
|-------|---|--------------|
| 1 | Database systems, database design lifecycle | No labs |
| 2 | Conceptual database design | Tutorial 1 |
| 3 | Relational data model | EER-Tutor |
| 4 | Relational algebra, SQL DDL | Tutorial 2 |
| 5 | SQL Queries | Lab 1 |
| 6 | SQL Queries and DML | Lab 2 |
| Break | | |
| 7 | SQL triggers | SQL-Tutor |
| 8 | Data normalization | Lab 3 |
| 9 | Physical level | Lab 4 |
| 10 | Catalog, Transaction Processing | Lab Test |
| 11 | Query optimization | Tutorial 3 |
| 12 | Course review | Tutorial 4 |