**Course Review** 

- COMP3311 Course Aims
- Syllabus Overview
- Assessment Summary
- Final Exam
- Revision
- Assessment
- Beyond COMP3311
- Some Thoughts ...
- Finally ...

COMP3311 20T3 ♦ Course Review ♦ [0/10]

**,** >>

## COMP3311 Course Aims

At the end of this course you should be able to:

- develop accurate, non-redundant data models;
- realise data models as relational database schemas;
- formulate queries via the full range of SQL constructs;
- use stored procedures and triggers to extend DBMS capabilities;
- write Python scripts that interact effectively with databases;
- analyze performance issues in relational database applications;
- understand the overall process of query evaluation;
- understand transactions and serializability

COMP3311 20T3 ♦ Course Review ♦ [1/10]

# Syllabus Overview

### 1. Data modelling and database design

- o Entity-relationship (ER) design, relational data model
- Relational theory (algebra, dependencies, normalisation)

#### 2. Database application development

- SQL for querying, data definition and modification (PostgreSQL's version)
- extending SQL Queries, Functions, Aggregates, Triggers
- PostgreSQL, psql (an SQL shell), PLpgSQL (procedural SQL)
- SQLite, sqlite3 (an SQL shell)
- Python3, Psycopg2, accessing data programmatically

#### 3. DBMS theory/technology

- o relational algebra, functional dependencies, normalization
- o DBMS architecture, query processing, transaction processing
- performance tuning, indexes

COMP3311 20T3 ♦ Course Review ♦ [2/10]

## Assessment Summary

Your final mark/grade will be determined as follows:

```
quizzes = mark for on-line quizzes (out of 18)
       = mark for assignment 1
                                    (out of 12)
ass1
ass2
       = mark for assignment 2
                                    (out of 16)
       = mark for assignment 3
                                    (out of 14)
ass3
       = mark for final exam
                                    (out of 40)
exam
                                    (after scaling)
       = exam >= 18
okExam
       = ass1 + ass2 + ass3 + quizzes + exam
mark
       = HD|DN|CR|PS if mark >= 50 && okExam
grade
                      if mark < 50 && okExam
       = FL
                      if !okExam
       = UF
```

COMP3311 20T3 ♦ Course Review ♦ [3/10]



Thu 03 Dec, 12-hour exam time-frame, with ~ 3-hours worth of work

### Questions ...

- ~60% practical, including SQL, PLpgSQL, Python, Psycopg2
- ~40% theory, including typed answers

What you have access to ...

- the exam paper (html)
- the Course Webcms3 site
- PostgreSQL/Python/Psycopg2 doco
- ... and the whole Web

COMP3311 20T3 ♦ Course Review ♦ [4/10]

>>



### Sources for revision material:

- Lecture Notes, Prac/Theory Exercises, Assignments
- Fundamentals of Database Systems, Elmasri/Navathe
- Database System Concepts, Silberschatz/Korth/Sudarshan
- Database Management Systems, Ramakrishnan/Gehrke
- Database Systems: Complete Book, Garcia-M/Ullman/Widom
- Database Systems: App-oriented, Kifer/Bernstein/Lewis
- PostgreSQL/Python/Psycopg2 Documentation (to some extent)

COMP3311 20T3 ♦ Course Review ♦ [5/10]

>>



Assessment is about determining how well you understand the syllabus of this course.

If you can't demonstrate your understanding, you won't pass.

In particular, I don't pass people just because ...

- please, please, ... my parents will be ashamed of me
- please, please, ... I tried really hard in this course
- please, please, ... this is my final course to graduate
- please, please, ... I'll be excluded if I fail COMP3311
- please, please, ... if I fail this, I can't do COMP9xxx
- etc. etc. etc.

COMP3311 20T3 ♦ Course Review ♦ [6/10]

>>

Assessment (cont)

Of course, assessment isn't a "one-way street" ...

- I get to assess you in the final exam
- you get to assess me in the Course Evaluation

MyExperience evaluations are online (via MyUNSW) NOW

Telling me good things is ok.

Telling me things to improve is very useful.

COMP3311 20T3 ♦ Course Review ♦ [7/10]

## Beyond COMP3311

### COMP9313 Big Data Management

• handling data that won't fit in a DBMS on one machine

### **COMP9315** Database Systems Implementation

• comprehensive study of DBMS internals

### COMP9318 Data Warehousing and Data Mining

data summarisation/discovery techniques

### COMP9319 Web Data Compression and Search

compression and searching algorithms, and XML

#### **COMP6714** Information Retrieval and Web Search

finding information in unstructured text

COMP3311 20T3 ♦ Course Review ♦ [8/10]



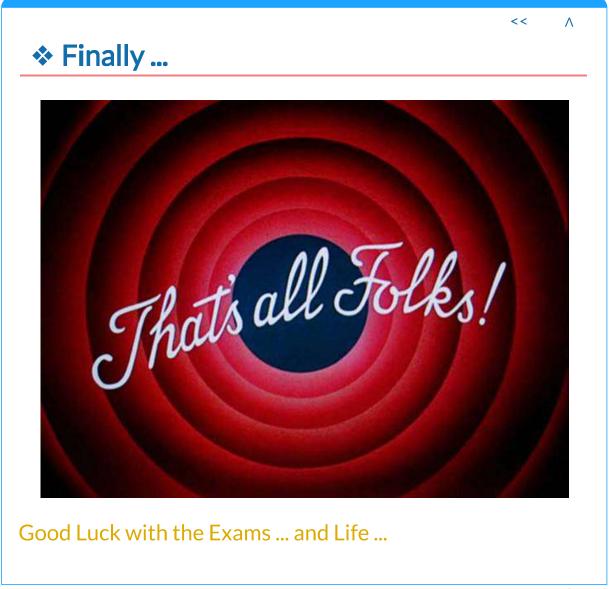
You need to learn for life, not just the exam.

In particular, learn to find answers for yourself.

No single correct answer. (Solutions range from poor to excellent)

Take pride in your work. (Aim for quality, not just correctness)

COMP3311 20T3 ♦ Course Review ♦ [9/10]



COMP3311 20T3 ♦ Course Review ♦ [10/10]

Produced: 23 Nov 2020