COMP[39]151 Course Information for Session 2, 2014

(The present document ($Revision: 1.13 $) is available online at
http://www.cse.unsw.edu.au/~cs3151/14s2/admin/outline.html).

This document describes two subjects: COMP3151 and COMP9151. The only difference between them is that the former is for undergraduate students only whereas the latter is for post-graduate students only. In both cases, this is a 6UoC credit subject. These UoC are not for free.

Prerequisites and Follow-Ons

COMP1927 or equivalent; excluded COMP9151 for COMP3151 and vice versa. Lack of prerequisites can be overridden by the lecturer's permission. Talk to Kai if in doubt. For most students, the 3rd year is more appropriate than the 2nd for taking this subject.

After mastering this subject, students may want to follow on with COMP4151.

Update Policy

This course introduction should be relatively stable at the beginning of session. Any updates after the initial publication in week one will be discussed in class and announced under the header **Fresh stuff** in the menu on the left hand side of the COMP[39]151 web site.

Course Overview by Keywords

Concurrency = processes + communication. Communication via shared variables vs message passing. Models of concurrency: true concurrency vs interleaving. Abstractions: atomicity, locks and barriers, semaphores, monitors, threads, RPC, rendezvous, transactional memory. Classical problems: mutual exclusion, dining philosophers, dining cryptographers, sleeping barber, termination detection, gravitational N-body problem.

Practical work: assignments consisting of (a) programming tasks to be solved in C + some concurrency library such pthreads or MPI, *and, simultaneously* a model checker specification language called Promela + (b) proofs of program properties.

Course Objectives

After successfully completing this course, you are able to

- design and implement multi-threaded, parallel, and distributed programs,
- talk, write, and reason about such programs, and
- appreciate the complexities involved in the previous two.

Keeping Informed and Staying in Touch

Course Web Site

Important notices related to this course will be displayed on the *course home page*, which is located at http://www.cse.unsw.edu.au/~cs3151/. It is your responsibility to check this page regularly.

Email

cs3151 to students

Only in rare cases urgent information may also be sent to your CSE email account. At the end of the session, each student will receive via email an invitation to fill in a detailed online survey.

Students to cs3151

Only requests of a confidential nature should be sent via email to the course account, cs3151. Everything else should be posted on the message board described next. If in doubt, send email and be prepared to receive the one-line answer: "*This can be asked on the forum.*" Emails originating from non UNSW/CSE accounts are routinely ignored.

Message Board

A message board has been set up for this subject. All but the truly confidential questions should be posted there.

RSS Feed

Notifications about anything deemed noteworthy and related to this subject are maintained as an RSS feed. The newest

items of that feed are also displayed first on the subject website.

Staff

Name	Role	email
Kai Engelhardt	Lecturer-in-Charge	kaie
Genevieve Anne Carter	Tutor	gac

Tutorials

You should attend a 1 hour tutorial each week. The page on class details shows tutorial times and rooms. Tutes start in week two.

Part of the allocated tutorial time will be devoted towards solving problems and discussing solutions related to lecture topics, while the remaining time will be used to discuss topics relevant to assignments.

Students will be required to present partial tutorial problem solutions under the guidance of the tutor. Individual student contribution (presentation, critiquing solutions, and suggesting alternatives) in tutorials will be assessed and forms part of the final mark for the course.

Note that tutorial marks will be based on participation only, there are no marks allocated just for attending.

[This part was adapted from COMP3231 quite some years ago.]

Consultations

If you need a consultation, make an appointment via email.

Text Book

The required textbook for this course is *Principles of Concurrent and Distributed Programming* 2nd edition, M Ben-Ari, Addison-Wesley, 2006.

Additional notes are made available on the course website.

Assessment Summary

The assessable components of the course are:

- 35% assignments submitted in pairs (distributed over 3 assignments worth 5, 15, resp., 15 marks each and due approximately at the end of week 4, 8, and 12, respectively.)
- 5% tutorial participation (subjective mark by your tutor)
- 10% Mid-session examination (1 hour during the Friday lecture in week 6)
- 50% Final Examination (2 hours, to be scheduled for the November/December examination period)
- 1 bonus mark for filling in an online course survey at the end of the session.

There will not be any multiple-choice questions in these exams. Being able to recognise answers is not good enough to pass this course.

Late Penalties

Late assignment submissions incur a (0.5% * maximum mark / hour) penalty for four days, after which submissions are no longer accepted. A submission which is handed in 3 days 23 hours and 1 second late will thus be marked down by 48% of the maximum mark.

As a hurdle requirement, your exam mark (= max(mid-session + final, 6/5 * final)) must be a pass (at least 30/60) in order to pass the course. The final mark will be the sum of the assessable components and bonus marks as listed above if the hurdle requirement is met. Otherwise, it is capped by 45.

Disclaimer

(Plagiarism, special considerations, supplementary exams)

Assignments are done in pairs. Pair work assignments will be marked as a group, i.e. groups of one will be marked the same as groups of two. Both group members are expected to contribute equally. In submitting your assignment, you are agreeing you have contributed equally unless we receive an agreed-to statement from both group members identifying differing levels of contribution.

All assignment submissions are routinely submitted to plagiarism detection. Recall that you are bound by the Yellow Form. Particularly relevant are the sections on *Originality of Assignment Submissions*, *Special Consideration — Illness & Misadventure*, and the *CSE Supplementary Assessment Policy*.

CSE uses its addendum to the UNSW plagiarism policy.

Course Evaluation and Development

Each year, the content of this document and, more importantly, the course is changed based on survey results from the previous years *if necessary*. In the first lecture I show and discuss these survey results and explain whether and how the course is changed to address the problems indicated in the surveys.

2013

Some points for criticism were the following.

- *There are no lecture recordings.*
  I have no means to record what I do on the white board. I believe that poor recordings of half the content are worse than no recordings because they trick some students into believing they can skip lectures. Attending lectures has multiple purposes: to ask questions, to take notes (e.g. of what's on the board or what's said), to interact.
- *A 3h final exam would be better.*
  I believe that our students are typically overassessed and undereducated. Adding an hour to the final would only aggravate the former problem.
- *Assignment feedback was too slow.*
  This is a tricky one. The assignments in this course are not only hard to complete but also hard to mark. Discussing solutions in class or in the tutes should help alleviate this inherent problem at least somewhat.

2011

In the 2011 survey a student wrote

> Also tell them (the next class) this -> "ASK MORE QUESTIONS. You may feel intimidated because the nicta/4thyears/postgrads already know the answer, but the rest of us mere mortals (like 70% of the class) are AS LOST AS YOU. Do everyone a favour and ask. The worst that can happen is a meteor hits you in the face - and what are the odds of that?"

which I hereby pledge to be telling 49% more often than before.

Many students expressed that having more maths in the 2nd hour of the 2h lecture wasn't working. For 13s2 the material is re-ordered to avoid maths overload if possible.

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