COMP1521 22T3 — Course Review, Final Exam

https://www.cse.unsw.edu.au/~cs1521/22T3/
Course Goals

At the end of COMP1521, we hope that you ...

- can think like a systems programmer, with an understanding of the structure of computer systems;
- can describe how computers/programs work at a low-level, with a deep understanding of run-time behaviour; and
- are better able to reason about and debug your C programs

Major themes ...

- software components of modern computer systems
- how C programs execute (at the machine level)
- how to write (MIPS) assembly language
- Unix/Linux system-level programming
- how operating systems are structured
- introduction to concurrency, concurrent programming
- brief overview of virtual memory & caching (not on exam)
Course Syllabus and Topics

- the basic components of a (MIPS) CPU
- how to write programs in (MIPS) assembler
- how (C) data structures are represented at machine level
- how (C) programming language constructs are implemented as (MIPS) assembler
- bit-level operations
- representation of integers in fixed number of bits
- representation of reals in IEEE754 floating point on
- representation of characters as Unicode (UTF-8)
- systems programming, including:
  - file operations
  - processes
- an introduction to threads/concurrency
Assessment

- 15% Labs
- 10% Weekly Programming Tests
- 15% Assignment 1 — due Monday week 7
- 15% Assignment 2 — due Monday week 11
- 45% Final Exam

... above marks may be scaled to ensure an appropriate distribution.

To pass, you must:

- score 50/100 overall
- score 18/45 on final exam

For example ... 55/100 overall, 17/45 on final exam \(\Rightarrow 55\text{ UF} \text{ not} 55\text{ PS}\)
Assessment: Labs, Tests

- Labs, in weeks 1-5, 7-10:
  - max lab mark: 2 marks with challenge exercises
  - max lab mark ~1.6 marks without challenge exercises
  - labs marks summed and capped to give mark /15.
  - you can get 99% for lab mark without challenge exercises
  - expectation: most people will get 12+/15

- Tests, in weeks 3...10:
  - max test mark 1.7
  - best 6 of 8 test marks summed and capped to give mark /10.
  - expectation: most people will get 7+/10
Final exam in CSE labs - **Tuesday 29 November
- closed book exam — no materials allowed.
- but you will have access to online language cheatsheets, documentation & man pages
  - same as weekly tests

Morning & afternoon sessions
- You have asked to indicate preference
- We will allocated you to preferred session if possible
- You receive e-mail with link to allocation by Friday Week 11

Afternoon session starts before morning session finishes
- not permitted to leave morning session early
- not permitted to start afternoon session late
- afternoon session allocation will indicate a regular room
- afternoon session people accompanied to lab after morning session finishes

Students overseas for 22T3 have been offered online exam
- will run at same time as afternoon session
- Studnets sitting online will be emailed more information by Friday Week 11
- if you sit morning exam, do not communicate exam questions or answers to anyone until afternoon session finished
Exam Conditions

- UNSW on-campus exam rules apply
  - see https://www.student.unsw.edu.au/exam/rules

- including:
  - bring your student card (other photo-id if student card lost)
  - phone, smart watch, other electronic devices switched off in your bag
  - you may bring clear water bottle
  - you can not bring your own keyboard/mouse or other hardware

- Deliberate violation of exam conditions will be treated as serious misconduct.
Exam Environment

- Restricted exam environment - not your CSE account
  - similar to default CSE lab environment
- No access to internet
- No access to your files
  - no editor configuration files!
- Standard CSE lab machine commands available
  - including dcc, mipsy
  - not yet confirmed mipsy-web available
    - we let you know by Friday week 11 if mipsy-web not available
8-15 questions ... not of equal difficulty, not necessarily worth equal marks.

Each question answered in a separate file.

Some questions may involve writing programs ...
- some questions may ask you to write C;
- some questions may ask you to write MIPS;
- other languages not permitted (e.g., Python, C++, Java, Rust, ...)

Some questions may not involve coding ...
- some questions may ask for a short answer,
- similar to tutorial questions.

Answers will be submitted with give.
Exam Format — Programming Questions

For questions that require you to write C or MIPS ...

- Questions will usually include examples.

- You may, or may not, be given starting code, test data, or other files.

- Autotests may be available on submission for some questions. **Passing autotests does not guarantee any marks;** do your own testing. There may be no submission tests for some questions.

- It is *not* sufficient to match any supplied examples.

- Questions may specify additional restrictions or limitations imposed on your program.
Answers will be run through automatic marking software.

- Please follow the input/output format shown exactly.
- Please make your program behave exactly as specified.

Answers that don’t pass all automatic marking tests are hand marked, guided by automarking.

- *no* marks awarded for style or comments ...
  - but a human marker will be reading your program.
  - and you need to read your program
  - so use reasonable style, variable names, ...
  - comments only necessary to tell the marker something.
  - do not include your name in comments

Minor errors will result in only a small penalty.

- e.g., an answer correct except for a missing semi-colon would receive almost full marks.

No marks will given unless an answer has a substantial part of a solution (> 33%).

No marks just for starting a question and writing some code.
Answers must be an specified file, e.g. q1.txt

Question may specify format of file:

- e.g., 5 integers, one per line ...
- follow this format exactly

Question will give you an initial file to complete.

Submit completed file with give.
Special Exam Conditions

- Any extra time specified in your ELS exam conditions is allowed in this exam.
- All students see the same exam question text.
- The text shows the standard exam deadline, any extra time is additional to it.
- *give* may not know about extra time
  - don’t assume deadline *give* shows is correct
  - if in doubt ask exam supervisor
- email **cs1521@cse.unsw.edu.au** if you have concerns regarding ELS conditions
- If ELS conditions prevent you taking exam, let us know.
UNSW policy is that you may be required to take two exams in one day.

Exams Unit generally don’t consider all-day exams a clash and special consideration is not generally offered.

We know about about five students taking COMP3121 plus 2 other students

- will be offered exam at later date (check your email)
Special Consideration ("Fit-to-Sit")

This exam is covered by UNSW’s Fit-to-Sit policy.

By starting the exam, you are saying "I am well enough to finish the exam."

- If you are unwell before the exam:  
  see a doctor, apply for Special Consideration.

- If you become unwell during the exam:  
  talk to an exam supervisor ASAP.
22T2 COMP1521 Final Exam will be released by Monday 21st
   announced on class forum.

You can complete it as a practice exam. Autotests available.

Sample answers released Friday week (25th)

22T3 exam will use a format similar for at least some questions.
What should you study for?

- Important Areas to Focus Your Study On...
  - anything covered in a standard lab exercise
  - anything covered in a weekly test
  - anything covered by the assignments

- Less Important Areas
  - may still be questions on these topic but not many
  - challenge lab exercises
  - topics not covered in labs, tests or assignments
  - complex aspects of creating processes / threads

- Explicitly not assessed
  - Caching
  - Virtual memory
Marking will take time — likely 10-12 days.

When marking is complete, exam marks will be available via class marks database. I’ll send email announcing this.

You will receive marks for individual exam questions.

You will have an opportunity to have your marking reviewed.

Final results will appear on myUNSW.
Supplementary Assessment

- If you miss the original exam due to illness/misadventure, you may be eligible for a supplementary exam; apply for special consideration. Schools and individual courses cannot offer supps.

- Students with borderline results are **not** offered supps. (... except potential graduands.)

- Similar format to final exam.

- Supp exams will be 23T1 week 0 in CSE labs
  - students overseas for 22T3 and 23T1 sitting supp will be offered online alternative
What did you like?

One aim of COMP1521 is to give a taste of many topics:

- liked MIPS, Assembly?
  ⇒ COMP3222, COMP3211 ...

- curious about programming languages?
  ⇒ COMP3131, COMP3141, COMP3161, COMP6991, ...

- liked operating systems?
  ⇒ COMP3231/3891, COMP9242, ...

- liked concurrency?
  ⇒ COMP3151, COMP3153, COMP6721, COMP6991, ...

- liked *nix shell?
  ⇒ COMP2041
Upcoming Course Offerings (2022 - 2023)

- COMP1531: Software Engineering Fundamentals
  - 22T3, 23T1, ...

- COMP2511: Object-oriented Programming
  - 22T3, 23T1, ...

- COMP2521: Data Structures and Algorithms
  - 22T3, 23T1, ...

- COMP3231: Operating Systems
- COMP3891: Extended Operating Systems
  - 23T1,
Thanks to:

- Our wonderful teaching staff
  - Tutors
  - Lab assistants
  - Forum staff
  - Help session teachers
  - Content improvers
  - Assignment authors
  - Assignment markers

- All of you!
How did we do?

What worked well?

What could we do better?

Let us know: myexperience.unsw.edu.au

myExperience incentive...?
And that’s all!

Good Luck!

- I hope what you’ve learnt in this course will be useful.
- I hope you get the mark you’re aiming for!