Course Goals

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

- understand the structure of computer systems
- can describe how computers/programs work at a low-level
- are better able to reason about and debug your C programs

Major topics . . .

- components of modern computer systems
- how C programs execute (at the machine level)
- how to write (MIPS) assembly language
- Unix/Linux system-level programming
Syllabus/Topics

- bit-level operations
- representation of integers & doubles
- the basic components of a (MIPS) CPU
- representation of programs as (MIPS) machine code
- how to write programs in (MIPS) assembler
- how C programs are implemented as (MIPS) instructions
- systems programming, including:
  - file operations
  - processes
- representation of characters as Unicode
- introduction to virtual memory
- introduction to threads/concurrency
Assessment

- 15% Labs
- 10% Weekly Programming Tests
- 15% Assignment 1 — due week 7
- 15% Assignment 2 — due week 10
- 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 ⇒ 55 UF not 55 PS
Labs and Tests

- 9 labs - weeks 1-5, 7-10
  - max lab mark 2 marks with challenge exercises
  - max lab mark ~1.6 marks without challenge exercises
  - 9 labs marks summed and capped at 15
  - you could get 99% for lab mark without challenge exercises
  - most people will get 12+/15

- 8 tests - weeks 3...10:
  - max test mark 1.7
  - best 6 of 8 test marks summed and capped at to give mark out of 10.
  - most people will get 7+/10
The 20T2 COMP1521 Final Exam is available at:
https://cgi.cse.unsw.edu.au/~cs1521/20T3/exam/practice/questions

You can complete it as a practice exam

Autotests available

Sample answers will be released noon Wednesday 25th

20T3 exam will use similar format similar for at least some questions
Exam

- Run under same conditions as Weekly Tests
- Except 3 hours and some questions may not be coding
- Saturday 28 November 13:00 — 16:00
- Exam will be released on class web site at 12:50
- Announcements before & during exam will be sent to your UNSW email
- Questions during exam can be sent to cs1521.exam@cse.unsw.edu.au
- We may also announce a 2nd place you can ask questions during exam.
Exam Conditions

- You are not permitted to communicate (email, phone, message, talk, ...) to anyone but COMP1521 staff during exam.
- You are not permitted to get help from anyone but COMP1521 staff during the exam.
- This is a closed book exam: you are not permitted to access papers, books, files on your computer or the internet.
- You are permitted to access the exam web pages on the class web site.
- You are permitted to access the online language cheatsheets & documentation on the class web site.
- Deliberate violation of exam conditions will be treated as serious misconduct.
Exam Format

- 10-15 questions
- Each question answered in a separate file.
- Some questions will ask you to write C.
- Some questions will ask you to write MIPS.
- Other languages not permitted (e.g., Python, C++, Java, Rust, ...)
- Some questions may not involve coding
- Answers will be submitted with give.
- Questions not equal difficulty
- Questions may not be worth equal marks
Non-coding Questions

- 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 must give you an initial file to complete
- File will be submitted with give.
Coding Questions

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

- Questions will usually include examples.
- You may or may not be given starting code.
- You may or may not be given test data or other files
- 1 or more autotests may be available on submission.
- 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.
Marking of Coding Questions

- Answers will be run through automatic marking software.
  - Please follow the input/output format shown exactly.
  - Please make your program behave exactly as specified.
- All answers are hand marked, guided by automarking.
  - No marks awarded for style or comments . . .
  - But use decent formatting so the marker can read the program!
  - Comments only necessary to tell the marker something.
- 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 contains a substantial part of a solution (> 33%).
- No marks just for starting a question and writing some code
Special Exam Conditions

- any extra time specified in your ELS exam conditions is allowed in this exam
- all student see the same exam questions text
- the text shows the standard exam deadline, any extra time is additional to it
- give should be configured to allow your extra time
- give should show a deadline including your extra time
- email cs1521@cse.unsw.edu.au immediately during exam if you have concerns regarding ELS conditions
- if ELS conditions prevent you taking exam, alternative will be supp in January
Exam On Same Day

- a small number of students have exams on the same day
  - MARK1012 & COMP9517
- these exams are timetabled as all day exams
- special considerations have advised they will not give special consideration for clashes with all day exams
Problems During Exam

- if a problem occurs during the exam, e.g. internet failure
- please document the problem as possible, e.g. take screenshot
- email cs1521.exam@cse.unsw.edu.au
- if the problem is of short duration we may be able to give you extra time
- otherwise you’ll need to apply for special consideration
Special Consideration — ‘Fit to Sit’

- By starting the exam, you are saying "I am well enough to sit it".
- If unwell before exam, see a doctor, apply for Special Consideration.
- If you become unwell during the exam
  - email cs1521.exam@cse.unsw.edu.au
  - if you can’t continue the exam you will need to see a doctor and apply for Special Consideration.
What to study

- 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
  - challenge lab exercises
  - topics not covered in labs, tests or assignments
  - may still be questions on these topic but not many

- Even Less Important Areas
  - creating pipes and other complex aspects of creating processes
  - complex signal handling
  - semaphores & file locking
  - might or might not be a question on these topic
Provisional Results

- Exam marks will be made available via class database when marking is complete.
- I’ll send email announcing this.
- Marking will probably take 12 days.
- Your will receive marks for individual exam questions.
- You will be opportunity to have marking reviewed.
- Final results will appear on myUNSW.
Supplementary Assessment

- UNSW supplementary exams are run centrally.
- Supplementary exams are for students who miss original exam due to illness/misadventure.
- If this is you — apply for special consideration.
- Lecturers & schools can not offer supps.
- Students with borderline results are not offered supps. ... except potential graduands
- Supp exams centrally timetabled for January 11-15, 2021
- Similar format to final exam
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, . . .

- Liked Operating Systems?
  ⇒ COMP3231/3891, COMP9242, . . .

- Liked Concurrency?
  ⇒ COMP3151, . . .

- Liked Networking?
  ⇒ COMP3331, COMP4336, COMP4337, . . .

- Liked Unix shell?
  ⇒ COMP2041
Course Offerings

COMP1531 Software Engineering Fundamentals
- 2021: term1, term3

COMP2511 Object-oriented Programming
- 2021: term2, term3

COMP2521 Data Structures and Algorithms
- 2021: term1, term2, term3

COMP3231 Operating Systems
- 2021: term1
COMP1521- The Bad

- MIPS and its relation to C needs to be better explained
- Not enough time to cover (so) many things
- Tuts and Labs need to integrate better.
- Labs a lot of work - but you learnt a lot
- Assignments a **lot** of work - but you learnt a lot
COMP1521 - The Good

- Most labs exercises (do you agree??)
- Weekly Tests (do you agree??)
- Tutors
- Discourse
- Students
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 deserve.