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
• Unicode
• introduction to operating systems
• introduction to virtual memory
• introduction to networks
• introduction to threads/concurrency

Assessment

10% 9% 13% 13% 55%
labs tests assign. 1 assign. 2 final exam

Marks may be scaled to ensure an appropriate distribution.

To pass COMP1521 you must
• score 50/100 overall
• score 22/55 on final exam

For example:
55/100 overall and 20/55 on final exam ⇒ 55 UF not 55 PS

Lab & Test Marking

10% 9% 13% 13% 55%
labs tests assign. 1 assign. 2 final exam

• Lab marks from weeks 1...10, summed and capped at 10.
• Tests were weeks 3...10:
  best 6 of 8 test marks summed to give mark out of 9.
Exam

<table>
<thead>
<tr>
<th>10%</th>
<th>9%</th>
<th>13%</th>
<th>13%</th>
<th>55%</th>
</tr>
</thead>
<tbody>
<tr>
<td>labs</td>
<td>tests</td>
<td>assign.1</td>
<td>assign.2</td>
<td>final exam</td>
</tr>
</tbody>
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- Internal exam run in CSE labs.
- Wednesday 4 December 2019.
  Two sessions: 09:15 — 12:30; 12:20 — 16:10
- Students with clashes scheduled in non-clashing session.
- Seating details on class web page 48+ hours before exam.
- Closed book exam — no materials allowed.
- Online language cheatsheets & documentation:
  https://www.cse.unsw.edu.au/~cs1521/19T3/exam/
- A4 attendance slip; most of it available for rough work.

Exam — Part 1

- Must be completed during first 30 minutes of 3 hour exam.
- No use of computer allowed during this part except to enter answers into application and view online documentation,
- You can not run spim or dcc or . . .
- 15–20 questions, short answer or multiple choice.
- Some questions will ask you to read C or MIPS and indicate what it does.
- Please write output exactly.
- Exam skeleton released by 17:00 day before exam.

Exam — Part 2

- ~12 questions
- You get the part 2 questions at the start of the 3 hours but questions will require typing answers into a separate file which you won’t be able to do until the first 30 minutes is up.
- 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 require a written answer (in a .txt file).

Exam — Part 2: 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.
Exam — Part 2: Marking Coding Questions

For part 2 questions requiring code:
- 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 Consideration — ‘Fit to Sit’

By attending the exam, you are saying “I am well enough to sit it”.

If you are unwell, see a doctor, apply for Special Consideration.

If you become unwell during the exam, talk to an exam supervisor.

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.
- Provisional marks will be emailed to you by Dec 17.
- You will be emailed time(s) which you can view your exam and check marking.
- Final results will appear on myUNSW.

Supplementary Assessment

- UNSW supplementary exams are now 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 no longer offered supps.
  
  ...unless a potential graduand — may be offered a supp.
Supplementary Exam

- Supp exams centrally timetabled for week of 13–19 January
  ...expect COMP1521 supp exam in **week 0 of term 1, 2020**
- Similar format to final exam (no skeleton released).
- Supplementary assessment offers will be sent by email.

What did you like?

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

- Liked MIPS/assembly?
  ⇒ COMP2121, 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 Context

Course Offerings

COMP1531 Software Engineering Fundamentals
  - 2020: term1, term3
COMP2511 Object-oriented Programming
  - 2020: term2, term3
COMP2521 Data Structures and Algorithms
  - 2020: term1, term2, term3
COMP2121 Microprocessors and Interfacing
  - 2020: term1,
COMP3231/3891 Operating Systems
  - 2020: term1
COMP1521 - The Bad

- MIPS and its relation to C not well done
- Need to start MIPS and explore C as we know more about underlying machine.
- Not enough time to cover (so) many things
- Labs need more motivation.
- Tuts to integrate better.
- Labs a lot of work - but you learnt a lot
- Assignments a lot of work - but you learnt a lot in ass1 and hopefully ass2.

COMP1521 - The Good

- Most labs exercises (do you agree??)
- Weekly Tests (do you agree??)
- Tutors
- Piazza
- 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.