COMP1521 26T2

Week 10 Lecture 1: The Final Week of Lectures

Exam and Revision

Announcements: Assessments

Week 9 Test: Due Thursday 9pm
Assignment 2: Due Friday 6pm

Week 10 lab:

- Practice exam in cse labs worth 0 marks,
- **Lab 10** regular exercises are due Monday midday next week (week 11)

Week 10 Test: Due Thursday 9pm next week

Announcements: Revision

- **Practice Exam** this week in in-person labs.
  - These questions will not be released
  - Please attend an in person lab today or Thursday or Friday to see the environment.
- **Revision Sessions in week 11**
  - First session basics (MIPS, bitwise, basic files)
    - You can also get help with bitwise operators revision questions from the previous revision session.
  - Second session (files, UTF-8, processes, threads)

Announcements: Past Papers

- **Past Papers**
  - One released soonish
  - One more released soonish after that
  - Two more released likely Week 11
- **Solutions**
  - Sometime Week 11
- **Autotests** will be available.
  - Submitting your answers with give won’t work.

Today's Lecture

- Course Overview
- Assessment
- Final Exam
- Revision



Course Goal

- Transform you into a **systems programmer**
  - Understand how a computer fundamentally works
  - Describe how programs work at a low level, with a deep understanding of runtime behaviour
  - Better reason about and debug your programs
    - Better reason about security issues

Questions we can now (hopefully) answer

- What's in a compiled file?
- How does your CPU run a compiled file? (and what if we write those instructions ourselves 😳??)
- How are variables represented on our computer?
- What magic are the functions in stdio.h doing?
- Why ❓ and how 🤯 do emoji 🥺 even 😲 exist 😍 ??
- How do computers multitask?

Syllabus

- Writing 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
- Representation of reals as floating point (IEEE754)
- Representation of characters as Unicode (UTF-8)
- Systems programming, including: file operations processes
- Introduction to threads/concurrency (pthreads)

Assessment

- 15% labs
- 10% weekly tests
- 15% assignment 1
- 15% assignment 2
- 45% final exam

To pass, you **must**:

- score 50/100 overall
- score **18/45 (40%)** on the **final exam** component

(For example, 55/100 overall, 17/45 on final exam would result in 55 UF not 55 PS)

Pass Rate

- We manually inspect the work of students just below the pass threshold
    - If we see many students who’ve sufficiently shown competency with basic course material but not passing, the exam mark or other components may be scaled up for everyone
- COMP1521 is a challenging course, but pass rate is around the same as the average for level 1 UNSW courses

Lab Marking

- Labs in weeks 1-5, 7-10
- Each week's lab (regular + challenges) is worth 2 marks
  - There are 9 labs, which means there are 18 marks.
  - If you receive more than 15 marks, your mark will be capped at 15.
- These 2 marks are allocated such that:
  - 1.6 marks are split evenly between each of the regular lab exercises.
  - 0.4 marks are split evenly between each of the challenges.
- This means that if you scored full marks on every regular lab exercise this term, you could score a maximum of
  - 9 * 1.6 = 14.4 marks - very close to 15!
- Most students usually get 12+/15

Weekly Test

- Max test mark each week:
  - 1.7 marks
- Best 6 of 8 marks summed and capped to give mark out of 10
- Most people usually get 7+/10

Exam Details

Date : December 1st
Times: TBA (last term 09:45 - 13:00, 12:50 - 16:40 including corralling)
Sessions : 2
Duration : 3 hours, 10 minutes reading time

Check your student ID cards and get a new one if it is lost or expired.

- a passport or an Australian driver's licence are also acceptable forms of ID, must not be digital.

The Final Exam: When and Where

Invigilated and held in CSE labs

Morning and afternoon sessions available

- You have been asked to indicate a preference
- We tried to allocate you to your preferred session where possible
- If you have a clash, the CSE exams team has already accounted for this
- You will receive an email confirming your final allocation

Exam Seating

- Your allocation information is available here: https://cgi.cse.unsw.edu.au/~exam/26T3/seating/register.cgi/allocations/

- The exact time and location of your exam will be available soon.
  - Please make careful note of this information,
  - Arriving at the incorrect time or location may result in you being unable to sit the exam.
  - If there is any issue with your allocation please contact cse.exams@unsw.edu.au ASAP.

The Final Exam: When and Where

Afternoon session starts before morning session finishes

- This is so that we can corral afternoon students to ensure they cannot communicate with morning students
- This means you **may not leave the morning session early**
- This also means that **may not be late to the afternoon** session

The Final Exam: The rules

- UNSW on-campus exam rules apply
  - see https://www.student.unsw.edu.au/exam/rules
- You must:
  - **Bring your student card**
    if student card lost bring hard copy of government photo ID
  - Have your phone, other electronic devices and watches switched off and in your bag
  - Have a completely clear water bottle if you choose to bring one
  - Not bring your own keyboard/mouse or other hardware
- Deliberate violation of exam conditions will be treated as serious misconduct, and may be referred to the student conduct and integrity unit (SCIU).

The Final Exam: Special Consideration

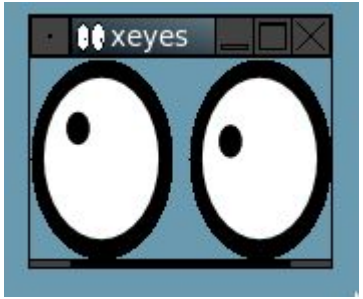
- This exam is covered by UNSW's Fit-to-Sit policy.
- By starting the exam, you are saying "**I am well enough to finish the exam.**"
- If you are unwell before the exam: see a doctor, apply for Special Consideration, and don't attend.
- If you become unwell during the exam: **talk to an exam supervisor ASAP**

The Final Exam: The exam environment

- Closed book exam - no materials allowed
- Restricted exam environment. **Not your** cse account.
- No access to
  - dcc-help or dcc-sidekick command
  - internet
  - course website
  - your own files
    - This means no personal editor configuration files

The Final Exam: The exam environment

- You will have access to
  - **MIPS documentation** and **C and Linux cheatsheet** (the same docs as in weekly tests)
  - **command line man** (recommended: learn to use man -k).
  - Gedit, Vim, Emacs, Nano, VSCode all provided as editors
- VSCode comes with
  - Xavier's mipsy extension
  - clangd, clang-format, syntax highlighters
- Standard CSE lab machine commands available
  - Including dcc, mipsy, man, python3, xeyes
- mipsy_web provided to use in-browser



The Final Exam: The Format

- 10 minutes reading time, 3 hours working time
- 10 questions … *not* of equal difficulty, not *necessarily* worth equal marks
    - Generally, easier questions are towards the start of the exam, harder questions towards the end.
    - But difficulty is subjective, of course.

The Final Exam: The Format

- Each question answered in a separate file.
- Questions will involve writing programs
  - Some questions may ask you to write **C** (a .c file)
  - Some questions may ask you to write **MIPS** (a .s file)
  - Other languages are **not** permitted
- Answers will be submitted using a command (similar to give)
- Questions will include examples.
- You may, or may not, be given starter code or other files.
  - If you are not given starter code, you must create your own files.
  - The file name will be specified in the question.

The Final Exam: The Format

- Autotests will be available for all questions.
  - **Passing autotests does not guarantee any marks** - do your own testing.
    - It is **not** sufficient to just match supplied examples.

Demo: examples of “bad” code that may match some or all autotests but would get 0 marks.

The Final Exam: The Format

- Questions may specify additional limitations or restrictions imposed on your programs.
  - You **must** follow these restrictions or limitations otherwise you will not receive any marks.
  - Questions will be reviewed by a human to ensure you have followed them.

The Final Exam: Marking

- **No marks awarded for style or comments.**
  - But a human marker may *need* to be able to deduce the behaviour of your program
  - And you should probably be able to read your own code
  - Please use reasonable style, variable names, so that we can give you the mark that you deserve
  - Comments only necessary to tell the marker something
  - Do not include identifying info in comments

The Final Exam: Marking

- Answers will be run through automatic marking software.
  - Please follow the input/output format shown exactly - autotest is a guide to help you achieve this.
  - There are also unseen autotests we use in automarking
  - Please make your program behave as specified.
- Answers that don't pass **all** automarking tests are handmarked, guided by automarking.

The Final Exam: Marking

- Minor errors will only result in a small penalty.
    - Eg. an answer correct except for missing whitespace would receive almost full marks.
- No marks given unless an answer shows substantial progress towards a solution (>33%)
- No marks just for starting a question and writing some generic code.
- Zero marks for submitting starter code.

The Final Exam: Special Conditions

- Any ELP extra time has been handled by the CSE exam team - you should see this on the allocations page
- All students see the same exam question text.
- The text shows the standard exam deadline, any extra time is additional to it.
    - If in doubt, talk to the exam supervisor.
- Email us if you have any concerns regarding ELP conditions.

Exam Preparation



Remember to:

- eat
- sleep
- drink water
- take all your medication.

You can't perform well if your body is falling apart.



If you are sick get a doctor's certificate and apply for special consideration.

What should you aim to study for

Focus on

- Areas covered by standard lab exercises
- Areas covered by the weekly tests
- Areas covered by the assignment

The first 8 questions on the exam will focus on concepts seen here.

What should you aim to study for

- These topics may show up in the final 2 questions of the exam.
  - Concepts seen in challenge exercises
  - Topics not covered by labs/tests/assignments
  - Complex aspects of creating processes/threads
    - this includes pipes (possibly in last exam question only)
- Note: The last question in the exam is considered to be a challenge exam question. Don’t be stressed or upset if you don’t finish it (or get up to it).

Supplementary Exams

- If you miss the original exam due to **illness/misadventure**, you may be eligible for a supplementary exam; apply for special consideration.
- Students with borderline results are **not** offered supps. (except potential graduands.)
- Similar format to final exam.
- Supp exams will be in 27T1 0 Week in cse labs

What did you like?

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

- liked **MIPS**, **Assembly** and hardware?
  - COMP3222, COMP3211…
- curious about **programming languages**?
  - COMP3131 (compilers), COMP3141 (functional Programming), COMP3161(theoretical), COMP6991 (Rust + concurrency), …

What did you like?

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

- liked **operating systems**?
  - COMP3231/3891 (OS and EXT OS), COMP9242 (Advanced OS), …
- liked **concurrency**?
  - COMP3153 (algorithmic verification), COMP6721 (informal methods - program correctness), COMP6991 (Rust)
- liked ***nix shell**?
  - COMP2041

COMP1521 - the bad

- Not enough tut/lab time with processes and concurrency
- No time to talk about caching or virtual memory
- Labs: a decent bit of work, but hopefully you learned a lot
- Assignments: a **lot** of work, but hopefully you learned a lot

COMP1521 - the Good

- Generally comprehensive lab exercises and test questions
- Our amazing tutors!!
- The hardworking students!!!!!

Thanks to

- Your lovely teaching staff
  - Admins
  - Tutors and lab assistants
  - Forum staff
  - Help session staff
  - Assignment authors
  - Content improvers
  - Assignment markers
- All of you!



Make sure you get a good night's sleep

If you are well rested, you will think more clearly, remember more and be able to solve problems creatively. Don't pull an all-nighter; being alert is your greatest asset.



Pack your bag the night before

Be sure to check what materials you're expected to bring and include extra stationery in case you need it. Neatly organise your materials, especially notes for open-book exams.



Be familiar with your exam location

Make sure you know how to get to the exam with minimum stress well ahead of time. You can visit the exam venue a few days before to establish how you'll get there



Arrive ahead of time

Plan to get to there at least 30 minutes before the exam start time. This will ensure you aren't stressed and leave some buffer room for unexpected delays.



Avoid panic talk!

You don't want other people's nervousness or stress to rub off on you before an exam. Stand apart from the main scrum of students and keep calm.



Fuel yourself

Easily digestible, solid foods like rice, bread, savoury biscuits or bananas are the best. Keep coffee and sugar to a minimum as these will only give a short boost.

Revision Questions

- Threads
- Processes
- Files
- Unicode
- Bitwise
- Floating Point
- Integers
- MIPS

myExperience:

- How did we do?
- What worked well?
- What worked better?
- Let us know:
- Please give your tutors feedback - myExperience is the best way to give them feedback, and it will more likely than not make their day.

https://myexperience.unsw.edu.au/

And that’s a wrap

- **Good luck** 🎉
- We hope you’ve learnt useful things in this course.
- We hope you get the mark you’re aiming for!
- You are nearly there!!! Then you can get a nice break!!!
- UNSW Wellbeing

Reach Out

Content Related Questions:

Forum

Admin related Questions email:

cs1521@cse.unsw.edu.au



Student Support | I Need Help With…

My Feelings and Mental Health
Managing Low Mood, Unusual Feelings & Depression



Mental Health Connect
student.unsw.edu.au/**counselling**
Telehealth



Mind HUB
student.unsw.edu.au/**mind-hub**
Online Self-Help Resources



In Australia Call Afterhours UNSW Mental Health Support Line
1300 787 026
5pm-9am



Outside Australia Afterhours 24-hour Medibank Hotline
+61 (2) 8905 0307

Uni and Life Pressures
Stress, Financial, Visas, Accommodation & More



Student Support
Indigenous Student Support
student.unsw.edu.au/**advisors**

Reporting Sexual Assault/Harassment



Equity Diversity and Inclusion (EDI)
edi.unsw.edu.au/**sexual-misconduct**

Educational Adjustments
To Manage my Studies and Disability / Health Condition



Equitable Learning Service (ELS)
student.unsw.edu.au/**els**

Academic and Study Skills



Academic Language Skills
student.unsw.edu.au/**skills**

Special Consideration
Because Life Impacts our Studies and Exams



Special Consideration
student.unsw.edu.au/**special-consideration**