Questions and Answers
Vol. 2

or
"We'll get to Q&A Vol. 2 eventually... Right?"

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But first…

Some house keeping

Calendar at a glance

Week	Dates	Lecture	Reviews	Demos	Assessment submissions
1	2/3 – 6/3	Introduction			
2	7/3 – 11/3	Principles of Mechatronic Systems design			Problem analysis
3	14/3 – 18/3	Professional Engineering Topics			
4	22/3 – 25/3	Your soldering is (probably) terrible	Progress review 1		
Break	28/3 – 1/4				
5	4/4 – 8/4	Introduction to Teleoperation			
6	11/4 – 15/4	Q&A 1			
7	18/4 – 22/4	PCB Hints	Progress seminar	25% demo	
8	25/4 – 29/4	Q&A2			
9	2/5 – 6/5	WTF??		50% demo	
10	9/5 – 13/5		Progress review		
11	16/5 – 20/5			75% demo	Preliminary report
12	23/5 – 27/5				
13	30/5 – 3/6	Closing lecture		Final testing	Final report and reflection

You are here

Time table variation

- For reasons I don't know and which probably make no sense anyway, next week's Tuesday runs on a Monday timetable
  - Our Tuesday lecture slot is thusly obliterated

- This would normally mean no prac either…

Fight the power

- But we have our own classroom!
  – Can't stop the signal

- The pracs will go on!

- 50% demo will run as expected

Контроль Ныне!

Progress reviews

- Progress Review 2 is ~~next week~~ the week after next (but I'll talk about it now)
  - 15 minute slot per group
  - Each group member presents in turn
  - Should only take 3-4 mins each

- Sign up for session slots via Doodle poll
  - Link to poll will be sent out via Blackboard announcement next week (closes next Friday)

Progress reviews

- How to sign up:
  - Have **<u>one and only one</u>** member of your team nominate a time for your team on the poll
  - When they sign up, they must include their **<u>full name and team number</u>**. If they don't put both, the slot will be cleared.

- If you absolutely can't get a slot that works for all of your group, email me ASAP
  - But this should never happen

Progress reviews

What is expected for the progress review?

- Need to show that you've made a decent start to the project: **tangible evidence**

  - <u>Desired:</u> rigorous analysis, detailed simulations working compiled code, breadboarded electronics, mockups of mechanical design

  - <u>Inadmissible:</u> scrawled pictures, isolated printouts of code, lousy rushed CAD or circuit diagrams, datasheets of that part you found

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Progress reviews

- Don't panic: we are reasonable
  - The progress review is entirely to motivate you to get started early, and check your progress

- We can tell very easily if you've actually made an effort – if you have, you'll be fine!

Progress Review flow chart
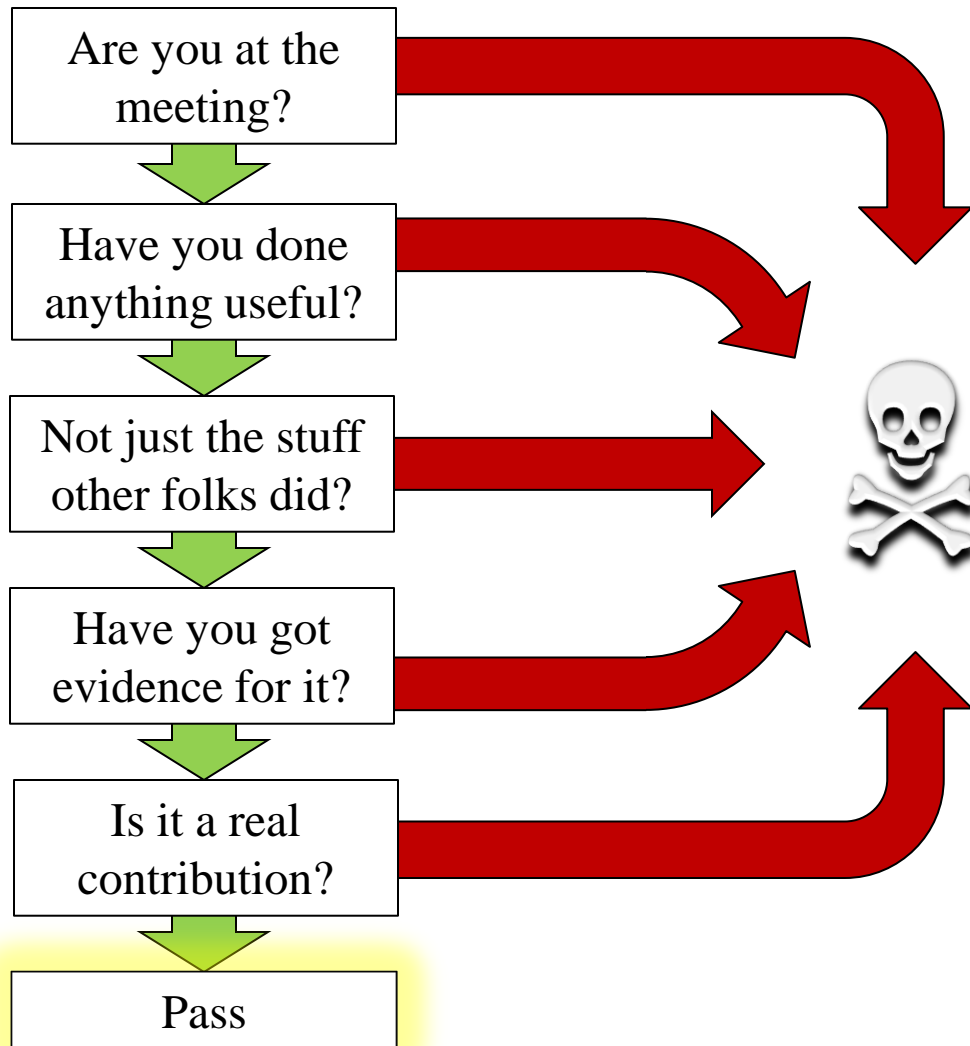
Incremental Demo

- Will run next Tuesday in the usual timeslot

- A terrific opportunity to get closed-box testing experience (and possibly marks)
  - Even if your team isn't testing, you can really learn –a lot– from the experience of others

- If you want to test, send me an email requesting a demo by Friday

FAQ Roundup

- **Hey, Paul, how about that borehole tube?**
  - Augh! Yes, I know – they keep telling me they'll have it "any day now". I'm really hoping by the time I'm presenting this, I'll have good news for you.

And now…

Gratuitous project tips

Gratuitous project tips!

- Your system should *very* comfortably slide through the test tubes – a very loose fit!
  - If there is any squeezing or snagging at all, it will certainly get stuck in the full-length pipe
  - And I'll probably destroy it trying to get it out

- Be prepared for weird borehole exit geometry
  - May not come out straight or square

Gratuitous project tips!

- Really think through the robustness and reliability of your manipulator
  - Many are little more than "stick a servo on it"
  - If it's not strong and robust, you're going to be very sad on testing day.

- Simple 'chopsticks' pincer grippers won't cut it – or if they do, I'll be astonished

Gratuitous project tips!

- You should be reliably driving around the mine interior by now
  - Make sure you can handle all the rubble
  - I guarantee you're going to need to

- 10 m of USB cable? Cool story, bro
  - USB is spec'd to 5 m maximum due to timing
  - What's so special about USB anyway??

Gratuitous project tips!

- A lot of people's design decisions are driven by what's "easy" rather than what the task demands
  - Wifi/Bluetooth comms modules
  - 328s everywhere
  - USB everything
  - Arduino *anything*
- If your solution doesn't work, I really hope you have supported it with good analytics

Gratuitous project tips!

- If any driver skill is required at all, you need to consider that part of your system
  - "But we didn't have enough time to practice" is not an excuse – prepare and test accordingly
  - Experience thus far indicates that usability of your system is actually quite important!
  - Even the best recovery system is useless if the driver gets stuck going around a corner

Gratuitous project tips

That's all for now!

But maybe more later…

Request for comment II

This time I'm going to mix it up!

Ask the person next to you for one thing they would want to improve about the course.

I will then ask you what they said! ☺

Questions

Tune-in next time for…

Questions and Answers Vol. 3

or

"The quick and the decaf"

Fun fact: The miners trapped in the 2010 Chilean mine collapse
swore an oath not to talk about what happened below
ground during the first weeks after the collapse.