

Notes from 190717 SE Retreat

Patrick Lam

July 19, 2019

Attended: Patrick Lam, Jo Atlee, Dan Berry, Dan Brown, Carmen Bruni, Werner Dietl, Spencer Dobrik, Michael Godfrey, Andrew Kennings, Andrew Morton, Nomair Naeem, Leanora McVittie, Shaz Rahaman, Derek Rayside, Simarjeet Saini, Victoria Sakhnini, Paul Ward

1B Physics

After much discussion, the consensus was to explore replacing ECE 106 (Electricity & Magnetism) with a science elective; there doesn't seem to be any reason this is not feasible. Furthermore, the specific slot in 1B could be a communications elective, leaving students choice in upper years about where to take the new science elective (recommended term 2A). Taking a science elective in 1B could be tricky due to scheduling.

Another point on the spectrum is to block enroll all students in ECE 106 as their third science electives but allow students to opt out (or strongly suggest that they do) and let students take a different science elective if they want.

Software Requirements

We had a briefer discussion about SE 463 (Software Requirements). Jo Atlee shared some of her past experience, e.g. having office hours during scheduled tutorial periods to make it easy for groups to seek help. She also suggested that it was an excellent candidate for a flipped class, as the material isn't conceptually difficult and can be viewed on one's own; in-class time could be used for exercises.

A valuable question that students need to be able to answer is "Does this technique apply to my project?" (and not just for SE 463 but across the curriculum).

We talked about the assignments. The assignment cadence is high (almost weekly) and often there isn't time to act on findings from the previous assignment (e.g. fixing one's code) before the next one is due. Perhaps students could pick their own schedule for handing in assignments (subject to instructor approval and in such a way that marking is feasible).

We also talked about CS 445/SE 463 integration. The concept of a default project presented in the retreat materials could help here; CS students would

do the default project always, while SE students could choose either the default project or their own Capstone Design project.

Co-op

My primary concern here was judging of peers using the sole criterion of which co-op job one's peer could secure. It's a fundamental human desire to judge others; the key is channeling this desire in more-healthy ways.

Possible interventions:

- start early with messaging on collaboration and teamwork (e.g. in SE 101);
- express expectations about being judge-y and about toxic behaviour (e.g. zero tolerance for “you got this job because you're a girl” whispers);
- help students develop resilience against being judged;
- develop and publish profiles of interesting co-op jobs;
- emphasize diversity of jobs available in the world;
- point out that employer (and human) judging criteria are random and emphasize the role of luck;
- acknowledge that judging is going to happen; keeping it civil and private; recommending admiration for worthy acts that others have done;
- remind students that co-op is not a zero-sum game (well, teach them about zero-sum games first).
- help students optimize the job search strategy in 1B (e.g. applying to overlooked jobs).

Someone mentioned what is on some of the EngSoc posters in E7: the only person you should compare yourself to is the person you were yesterday. I think that's a good one for our list here.

Plans and Vision

As seen in the State of SE data, the Software Engineering program at Waterloo is doing extraordinarily well in the current economic climate. We discussed some of the strengths and short-terms opportunities for improvement.

Doing well. Spencer Dobrik, as SE Society president, expressed appreciation for the program's support of the society (especially financial support); SE Soc is doing a great job of organizing events and getting students to them. Having SE-specific spaces (lounges and labs) is also quite positive.

Potential wins. On the topic of student space, we could get better furniture/hardware in student space:

- moving tables in large lab;
- moving whiteboards for lounge;
- wall mounted monitors/projector.

Improving the environment could involve:

- some students may perceive that they need to compete amongst themselves; we could have opportunities for students to show off talents in different off-axis ways (e.g. chess, arts, etc), and we can go beyond zero-sum student competition;
- creating a better environment for women (and perhaps other minorities e.g. LGBTQ; I am not aware of issues)—I have a good sense of the diversity in the incoming class but I've never counted in the 4B class.
- in a class of 125 there will always be cliques or friend groups; we can encourage students to be inclusive rather than exclusive.

Also on the radar:

- could we use class prof hours more effectively?
- what would be needed to change in industry to have more grads staying in Canada?
- how do we encourage more lateral thinking/independent work/links between courses before 3B?

For the Capstone Project, we learned of Velocity making available on the order of \$1k of compute credits/resources for teams.

For accreditation. Part of the point of this discussion was to help write content for the accreditation questionnaire. We should also talk about PEng and faculty hiring issues as concerns.