Notes about QES course dependencies

November 2021

The focus here is on dependencies between courses throughout a degree specialization's requirements. Aspects of curriculum that are **not** addressed here are those related to (a) specific learning goals / topics or (b) needs of employers and interests or priorities of students.

Comments are inspired by observing QES course dependency maps & figures at https://www.eoas.ubc.ca/~quest/.

Some observations from maps

1) EOSC213 is not required by any other in EOAS, and only as "one of" 3, for CIVL417.
2) Two ATSC and two geophysics 4xx courses require no EOAS prerequisites.
3) Why is EOSC354 not prerequisite for EOSC353? (More on eosc353 in **Questions** below.)
4) EOSC410 seems quite restrictive to undergrads (and taken by only ~4-8). See **Questions** below.
5) The "any programming language" for ATSC405, 409 is vague. Is that OK?
6) Anything requiring EOSC211 - should DSCI100 count too? Currently, ATSC313 is the only EOAS course with DSCI100 as a "one-of" prerequisite.
7) At 3rd year level, only ATSC303 and 313 require any computing. Not even EOSC211 or DSCI100 are required.
8) "Corequisites" are only mentioned twice, once for EOSC250 and once for ATSC404.
9) Do EOSC 45x really need no computing?
10) After collapsing "one-of" lists, all courses have fewer than 3 prerequisites EXCEPT eosc410 and 471.

Ideas for improving dependencies among QES courses and prerequisits

1) Have 4xx "specialist" courses include at least some "either or" prerequisites from EOAS? (eg ATSC405, 406 and EOSC450, 453.)
2) Could ATSC303 have more options for computing prerqs? Currently EOSC211 alone is required.
3) EOSC354:
   a) could Calc1 be swapped out in favour of EOSC211 or equivalent? EOSC211 requires Calc1.
   b) Augment physics requirements by adding PHYS153 & PHYS106 to the either/or.
4) Add SCIE001 to any requirements for Calc1 (3 3rd yr courses) or Physics101 (eg EOSC250).
5) Re. ATSC313: augment physics requirement by allowing PHYS153 & 106?
6) Re. ATSC405: augment Diff Eqns requirement by allowing MATH255 or 256?
7) Re. ATSC404: augment Applied Des requirement by allowing MATH257?
8) Re. EOSC410:
   a) augment stats requirement to include STAT201 or 251?
   b) augment cmpsc requirement to include five courses in "pink" box?
9) Re. EOSC471: augment requirement to include five courses in "pink" box?

Questions

1) Is ATSC212 now redundant?
2) EOSC211
   a) Student feedback from Dawson club members, reported to FJ, March 11, 2022: "significant proportion of the class" gets lost very soon and never really "gets it". Peers attempt to support but often without seeing any breakthrough in understanding. Details not conveyed, but dissatisfaction seems fairly widespread.
   b) Geophysics has included DSCI 100 in required courses. Other programs have not. This will give geophysics students a leg-up when they take 211, yet they are likely the students least in need of it. Will this increase the bimodal nature of student success in EOSC 211?
3) EOSC353
   a) Last offered in 2019W? Not in 2020W and not in 2021W
   b) Adjust to attract more than 3-8 students? Offer alternate years?
   c) Offer at 3rd year level?
4) Are ATSC405, 406 "redundant"?
5) Re. EOSC250:
   a) what in MATH200 as coreq is important?

b) Or - why not make it a prerequisite (or MATH253) like EOSC213?

6) EOSC410 seems quite restrictive to undergrads (and taken by only ~4-8).
   a) Is EOSC212 or ENVR300 necessary if "3rd yr in EOAS is included?
   b) Is that requirement in fact necessary? (Probably – but worth discussing).
   c) Could single requirement of eosc211 be loosened? Especially if CPSC203 and 210 are required.
   d) In fact, are CPSC203 and 210 really required?
7) What to do about lack of applied geophysics for QES students (grad/ugrad)? EOSC350 is at a lower level, but "should" be required for a geophysics degree if there is no replacement for the old EOSC452.