Project name:

Moving towards an online degree in surveying/geomatics engineering

Stakeholders:

Canadian Board of Examiners for Professional Surveyors (CBEPS) and Association of Canada Lands Surveyors (ACLS)

11 self-regulated land surveying associations (10 provincial and 1 federal)

6 Canadian universities and several technical colleges

Government of Canada (funding)

WHY THIS PROJECT?

- Canada is a large country (approx. 41 times U.K.) - a large land mass blessed with immense natural resources and a smallish population (approx. 38 million).

- Only 6 degree granting universities in geomatics engineering – one in Maritimes (east), one in Quebec - French speaking (east), two in Ontario (central), one in Alberta (west) and one in British Columbia (pacific) and all in larger centres.

- Geography is a real barrier and demographics is the impetus: huge cohort of people born between 1946 – 1965, many becoming land surveyors and a large number have started retiring. Expected that most will be retired between 2010 to 2030.

CURRENT SITUATION

- Formal in person examinations in March and October every year.
- Formal Foreign Trained Land Surveyors process for immigrants but same examinations to be taken in Canada.
- Funding approved for project in December 2020 right in the COVID-19 pandemic.

Institutions moved to online learning during the pandemic shutdown (still current) with no in person labs or practical training. Provided opportunities for many to take online courses without being part of the institution's program if they were registered as candidates with CBEPS. This included Foreign Trained Professionals'

- Project phases:
  - Modernize the syllabus (20+ years old)
  - Modernize the accreditation and exemption process (more flexibility)
  - Path towards online degree in surveying/geomatics engineering

FACE-TO-FACE ACTIVITIES

- Learning activities requiring face-to-face:
  - Practical training should be in person
    - Enlist collaboration of land surveying firms to provide hands-on training on various equipment and different survey types - successful in certain areas of the country and not in others.
    - Open labs to small student "bubbles".
    - Small groups of students for outside learning (not easy in winter in Canada).
  - Activities requiring specialized equipment or technologies.
  - Activities requiring high computing power.

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ONLINE CONTENT

- Online content enhancing face-to-face learning
  - Content of a surveying/geomatics engineering syllabus is rich in theory with only some subjects requiring mandatory face-to-face learning.
  - Generally theory precedes practice and theory is well positioned for online learning as it can be equated with lectures.
  - Practice can then follow with in person activities using the institution equipment and facilities to solidify the theory.
- Activities most suited to online teaching
  - Lectures and presentations
  - Videos and demonstrations

Foreign Trained Land Surveyors benefitted greatly from many courses required in Canada being provided online as they could attend from their own country.

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BLENDED LEARNING

- Blended online content and face-to-face activities
  - One Canadian university is committed to blended learning from now on with blended learning consisting of a group of in person students and a group of online students.
  - Practical learning activities requires attendance at the institution for set amounts of time and frequency **OR** assistance from surveying firms.
  - Practical examinations require in person attendance.
  - Flexibility and easy access need to be at the forefront of any blended program.
  - Examinations online require security – how to achieve this?

CHANGE IS DIFFICULT BUT NOT IMPOSSIBLE!

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