Action Plan: Engineering Transfer Certificate; Diploma in Applied Science for Engineering

Date Self-Study was submitted to AQA: ~~March 8, 2020~~ March 15, 2021

Date of External Review: April 22, 2020

The Action Plan, which follows the Self-Study and External Review, guides programs and departments as they:

- Follow-up on recommendations from the Self-Study and External Review;
- Develop realistic goals for improving or maintaining program quality;
- Determine the steps and resources required to reach those goals;
- Determine the people/groups responsible for each action;
- Establish a timeline (before the next program review cycle) within which these steps will occur.

The Action Plan, like all other aspects of a Langara Program Review, is faculty driven and Dean led. Faculty develop the Action Plan in close collaboration with the Division Chair and Dean. Once the Action Plan is ready for review, the Chair/Coordinator, Division Chair and Dean should schedule a meeting with the Provost.

Institutional Response

This review represents good and thoughtful work by the program and the program coordinator. Some of the important work on the action items is already underway or completed.

Particular focus within the rollout of the action plan includes:

- Continued consultation with receiving institutions and with industry
- Equity, Diversity and Inclusion
- Creating and enhancing opportunities for student engagement

Signed

JR Krause — Dean

March 15/21 — Date

Signed

Margaret Fleming — Provost and Vice-President

March 15, 2021 — Date

Original: Department Chair; cc: Division Chair, Dean, Provost & VPA, Director, AQA

Recommendations from the Self-Study and External Review this Action Plan does NOT Address.

Provide a brief rationale for why each Recommendation cannot be addressed. Add or remove rows as necessary.

Recommendation	Self-Study or External Review (include p.#)	Rationale
Investigate the feasibility of offering APSC 1010 and APSC 1050 both in the Fall and Spring semesters.	Self-Study, p. 14	APSC 1010 and 1050 are SFU specific courses; wait lists do not suggest demand. This is also the recommendation of the External Review Committee (p. 4).
Although APSC 1010 and 1050 are indicated as barriers for International enrolment, it is unclear as to why these courses are not required as part of the [Diploma] curriculum. On Pg. 23, APSC 1050 and APSC 1010 are described as required courses within the Diploma, although they are optional within the program outline. Additionally, these two courses appear to have specific program learning outcomes assigned to them, to which some students may not have exposure if they choose an alternative course.	External Review, p. 4, p. 6	Incoming Diploma students are strongly encouraged to enroll in APSC 1010 and APSC 1050 during their first semester in the program, and the majority of students do. As these two courses are only offered in the Fall semesters, flexibility was needed to allow students to graduate with the Diploma. Students in the Diploma are required to take CPSC 1090 and CPSC 1490 (or their successors, CPSC 1091 and CPSC 1491), as well as ENGL 1123 (or ENGL 1127) and CMNS 2228. The learning outcomes of APSC 1010 and APSC 1050 are covered by these courses at a higher level. Students are advised on the program curriculum page to consult the program coordinator if they would like to substitute other courses instead of APSC 1010 and APSC 1050.
As both APSC 1010 and APSC 1050 are concurrently offered (pg. 23), it is unclear why there would be a difference in class size between the two.	External Review, p. 4	APSC 1050 is a writing intensive course, and thus the class size is lower than that of a typical first year science course. As a comparison, most English and Communications courses at Langara have a class size of 25 students.
Recommendations regarding admission requirements made by the External Review committee: 1. Minimum 'C+' in Pre-Calculus 12 added to program requirements, not program preference 2. Examine wording for entry into the Certificate to better match UBC's requirements (e.g. Chemistry 11 or Physics 11 acceptable if presents strong otherwise)	External Review, p. 4	1. It is not clear which program the committee is referring to. The Certificate admission requirements list a minimum of B in Pre-Calculus 12. For the Applied Science Diploma, the math requirement has already been updated to minimum 'C' in Pre-Calculus 12, with 'C+' posted as program preference. The rationale behind this is that students admitted to the Diploma with a C in Pre-Calculus 12 can take MATH 1152 in the Fall semester to qualify for MATH 1170 in the Spring semester. 2. The students who are applying to the Engineering Transfer Certificate intend to use the UBC Engineering Transfer pathway. To be classified as an Engineering Transfer student, UBC requires students to complete the full curriculum (12 courses) of the program

Recommendation	Self-Study or External Review (include p.#)	Rationale
3. Explicit mention of English pre-requisite added to program requirements.		within two semesters. This means incoming students need to take PHYS 1125 and CHEM 1154 in the Fall semester, so they need to have completed both Physics 12 and Chemistry 12 before they start the program. 3. Effective January 2021, Langara introduced specific categories of English requirements for admission, and these are listed on the program admission pages.
Recommendations regarding APSC 1000 and APSC 1100 scheduling made by the External Review committee: - Timetable APSC 1000 and APSC 1100 to be conflict-free with student time tables (Recommendation #8). These are both required courses in the curriculum and their content valuable; APSC 1000 and APSC 1100 should be accessible by all students in the cohort - Students often place a lower priority on those courses which do not transfer; to better encourage student attendance of APSC 1000 and 1100, is it possible to roll its content into the revised engineering design curriculum (under the CFYEC) and work within its time tabled schedule?	External Review, p. 5, 7	APSC 1000 and APSC 1100 seminars are part of the Engineering Transfer courseload. Student attendance is mandatory, and the seminars are always scheduled so they do not conflict with the Engineering Transfer timetable.
Develop larger, engineering design projects (consistent with the common first-year curriculum learning outcomes)	External Review, p. 5	The three engineering courses, APSC 1010, CPSC 1090, CPSC 1490 (and their replacements, CPSC 1091, CPSC 1491) already have a significant project component each (worth 25-50% of students' grades).
Create a […] collected office space for faculty […].	External Review, p. 8	Most faculty teaching in the two programs belong to other academic departments and teach other students as well. However, creating a dedicated/permanent office space for faculty whose main assignment is within the Engineering programs should be considered and is addressed in the Action Plan below. (Goal 4)
Recognize the engineering credentials as part of a stand-alone program, with the resources and administration typically allocated to such programs. This recommendation may assist	External Review, p. 8	The Certificate and the Diploma are stand-alone programs, they do not belong to a department. The Engineering Coordinator reports directly to the Division Chair, and has a 2.66 section release. There is a shared Departmental Services Assistant position, which provides

Recommendation	Self-Study or External Review (include p.#)	Rationale
with issues identified in earlier chapters, and would be assisted by the recommendation to broaden courses covered under the APSC moniker (e.g. CPSC 1090, CPSC 1155, and CPSC 1490).		services such as meeting scheduling and minute-taking. The Division Chair provides a connection between the program and the rest of the Faculty of Science and the College, as well as support with budgeting, scheduling etc. The Division Assistant provides support such as organizing the student surveys (Student Response to Instruction, or SRI) used during evaluation of instructors. The Deans' office, as well as the People and Culture Department provide support with faculty contracts.

The External Review also included the following recommendations and comments pertaining to the writing of the Self-Study. Since the Self-Study has already been completed, these recommendations will help inform the next iteration of the Self-Study (when the program undergoes its next program review).

List the recommendations below:

Recommendation	External Review (p. #)
BCIT is not a reasonable comparable for the Langara Engineering Transfer programs given the former's exit potential as an employable technologist, and relationship with the full degree program at that institution (pg. 9).	External Review, p. 4
On Pg. 16 of Self-study, some courses not within the certificate program (e.g. APSC 1010 and APSC 1050) are attached to the learning outcomes of that program. These references should be removed. Additionally, APSC 1010 and 1050 are optional within the Diploma; it would not be appropriate to use these courses to demonstrate specific program outcomes.	External Review, p. 5
Under "Credential-Level Standard / Regulatory Standards: Explicitly mention all institutions into which your students are able to transfer into second-year.	External Review, p. 5
Distinguish between internationalization (e.g. global citizenship/intercultural competencies) and increasing international student diversity in the engineering programs. These concepts do have overlap, but it was unclear to which the international collaborations and/or resources were in response.	External Review, p. 5
On Pg. 29, 85% of faculty gave a positive rating to how well students are provided clear information. It was suggested a more appropriate measure would be to what degree students agreed with this statement as they are the receivers of that information.	External Review, p. 6 Note: Student response to this question was reported on page 28 of the Self-Study.

Recommendation	External Review (p. #)
On Pg 31, APSC 1100 should read APSC 1010.	External Review, p. 6
On Pg.32, 30-35% of students within the Certificate are identified as transferring in from the Diploma, while 15-25% come from high school. Where do the remaining students in the Certificate originate?	External Review, p. 7
On Pg.34, is the associate degree student outcome survey relevant for the ETC or ASED?	External Review, p. 7
The Committee would also like to congratulate the student groups and their instructors for their achievements with the Origami solar project, and the IEEE publication on the Biochar Arduino project. These are unique opportunities for first-year students.	External Review, p. 7

Goal 1: Enhance student pathways (transfers/articulation) and curriculum

List the Recommendation(s) this Goal addresses. Check the appropriate column to indicate if the Recommendation is from the Self-Study or External Review. Add or remove rows as needed.

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Adopt the Common First-Year Engineering Curriculum (CFYEC).		p. 6
Ch. 2 1. Formally adopt the CFYEC Learning Outcomes for the Engineering Transfer Certificate through the EdCo process.	p. 22	
Ch.3 12. Adopt the Common First Year Engineering Curriculum. a) Shepherd the two revised engineering courses (CPSC 1090 and 1490 replacements) through the EdCo process and send the revised courses for articulation. b) Include the new ENGL 1123 instead of ENGL 1127 in the curriculum of both programs. c) Submit program change forms to EdCo for both the Diploma and Certificate to reflect the change in these courses.	p. 36	
Leverage the CFYEC in pursuing formal transfer agreements with institutions outside the province as appropriate		p. 6
Ch. 3 13. Work on establishing transfer agreements with the three engineering schools at SFU. 14. Investigate the feasibility of signing agreements with institutions in Alberta, with engineering schools in Eastern Canada, and agreements with other institutions (including international partnerships).	p. 37	
Develop curriculum maps for both the certificate and diploma credentials. (Externla Review) Ch. 2 2. Work with the Teaching and Curriculum Development Centre (TCDC) to develop curriculum maps for both the Certificate and Diploma programs.	p. 22	p. 5
Create consistent learning outcomes between the certificate and diploma as the reason for a difference is not clear; it may be useful to tie back to CEAB graduate attributes (similar to BCIT).		p. 5

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Identify roadblocks inhibiting student success in transition between the certificate and diploma. (Externla Review) Ch. 3 11. Review the transition from the Diploma to the Certificate. Work with IR to identify patterns in the data that would indicate what factors correlate with the retention/success of Diploma students in the Certificate.	p. 36	p. 6
Ch. 3 15. Work on better articulation for APSC 1010 and APSC 1050; in particular, the current version of APSC 1050 should meet the SFU W requirements.	p. 37	
Ch. 3 4. Investigate ways of including Work Integrated Learning into the program curriculum.	p. 36	
Ch. 2 9. Work with faculty and TCDC to find ways to incorporate the College priorities (inclusion/diversity, indigenous education, and internationalization) into the curriculum.	p. 22	
Ch. 2 7. Continue discussions with instructors and the Internationalization Department on incorporating COIL.	p. 22	

Academic Plan Priority or Priorities this Goal supports. See the end of this document for the Academic Plan. Add or remove rows as needed,

Academic Plan Priorities
1.1. Promote and support innovation and quality in teaching and curriculum design
1.2 Maintain and expand experiential education opportunities
2.3. Continue to develop and refine external and internal student pathways
3.2. Expand awareness, acceptance, and inclusiveness of Aboriginal cultures within Langara

Planned Actions the program/department will complete to achieve this goal. Add or remove rows as needed.

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Sign-off on the Common First Year Engineering Agreement	Program coordinator	completed		The agreement was signed by the Provost in February 2020.,
Adapt the courses within the Engineering Transfer curriculum to match the CFYEC learning outcomes. This requires consultation with the departments teaching courses in the program.	Program coordinator	Fall 2019	ongoing	Two new engineering design courses, CPSC 1091 and CPSC 1491 we introuced to match the CFYEC ENGR I/II curriculum, replacing CPSC 1090 and CPSC 1490.
Establish a formal transfer agreement with the University of Alberta	Program coordinator	Summer 2021	Spring 2022	
Work on establishing transfer agreements with the three engineering schools at SFU.	Program coordinator	Summer 2021	Fall 2022	SFU has not yet signed on to the Common First Year Engineering Agreement.
Work with Institutional Research to identify patterns in the data that would indicate what factors correlate with the retention/success of Diploma students in the Certificate.	Program coordinator	Spring 2021	Fall 2021	
Work with the Teaching and Curriculum Development Centre (TCDC) to develop curriculum maps for both the Certificate and Diploma programs, and to create consistent learning outcomes between the certificate and diploma.	Program coordinator	Fall 2021	Fall 2023	
Work with faculty teaching in the two programs, with TCDC, and with the Indigenous Education Office and the Centre for Intercultural Engagement to find ways to incorporate the College priorities (inclusion/diversity, indigenous education, and internationalization) into the curriculum.	Program coordinator and faculty	Fall 2021	ongoing	p. 22 of the Self-Study lists some resources relevant to this action.
Work with the WIL Coordinator to investigate ways of including Work Integrated Learning into the program curriculum.	Program coordinator and WIL coordinator	Fall 2022	Fall 2023	

Resources required to achieve this goal.

Resources Required
The Common First Year Engineering Agreement stipulates that the two engineering design courses (CPSC 1091 and CPSC 1491) need to be taught by instructors with a P.Eng or Eng.L credential. The membership dues are to be paid by the College, through the Dean's budget.

Goal 2: Establish and enhance external connections

List the Recommendation(s) this Goal addresses. Check the appropriate column to indicate if the Recommendation is from the Self-Study or External Review. Add or remove rows as needed.

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Create a Program Advisory Committee (PAC) consisting of members of industry, the local branch of EGBC (professional association), alumni representatives, post-secondary partners (UBC, SFU), K-12 partners, recent students (immediately after 1st year). The program Chair and Faculty Dean (or representative) may sit ex-officio; PACs are broadly used in many engineering transfer programs within the sector to engage with industry, academic partners, alumni etc to ensure on-going assessment and improvement of delivery outcomes. Such PACs also provide support and a sounding board for new initiatives within the program. Most PACs meet once or twice a year.		p. 9
Work with EGBC to engage with their bulk-buy program, providing students in the program with one year of student membership at considerably reduced cost. Langara may also explore covering this cost as part of a service, as is done at some other PSIs (e.g. VIU).		p. 9
Recommend stronger engagement with EGBC to deliver contact on professional ethics, particularly how it relates to academic integrity and student conduct. Partner with the local branch of EGBC to facilitate access of students to their local seminar /dinner events, which typically take place monthly. Such events enable networking opportunities to students, and engage local industry with the program at Langara College.		p. 5, p. 9
Ch. 3 2. Consult with EGBC and local organizations to identify and establish relations with clients that can be called upon for student projects in CPSC 1090 and CPSC 1490.	p. 36	
Ch. 2	p. 22	

Recommendation	Self-Study (specify page #)	External Review (specify page #)
8. Invite diverse speakers (e.g. indigenous or female engineers) as speakers for the APSC 1000 and APSC 1100 seminars.		
Another suggestion includes direct/relevant engagement with Indigenous communities through case studies and/or engineering design projects.		p. 4
Maintain connection with Alumni through a LinkedIn page, and encourage students and alumni to sign-up. Such a page may also assist with drawing from the Alumni network for engaging with engineering design projects and potential work integrated learning opportunities.		p. 9
Alumni speaking seminars for current students which focusing on their education and career pathway after completing the program.		p. 9
Create a mentorship program between Alumni and current students.		p. 9
Partnerships with the local EGBC branch and other Lower Mainland post-secondary institutions to promote engineering education and career exploration.		p. 9
Coordinate an engineering competition open to institutions within the Lower Mainland.		p. 9

Academic Plan Priority or Priorities this Goal supports. See the end of this document for the Academic Plan. Add or remove rows as needed,

Academic Plan Priorities
1.3. Maintain and expand experiential education opportunities
3.3. Strengthen partnerships with Aboriginal community
5.3. Build sustainable partnerships with employers, community partners, and alumni

Planned Actions the program/department will complete to achieve this goal. Add or remove rows as needed.

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Explore the advantages and disadvantages of creating a Program Advisory Committee (PAC).	Program coordinator	Fall 2021	Fall 2023	

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Establish a closer relation with EGBC (e.g. the EGBC student program, the Vancouver branch).	Program coordinator	Spring 2021	ongoing	
Investigate the possibility of purchasing in bulk EGBC student memberships for the Certificate students.	Program coordinator	Spring 2021	Fall 2021	
Continue the relationship with the Tetra Society (involved in providing real-life examples for the CPSC 1090/1091 projects) and work on identifying other local organizations/ clients that can be called upon for student projects	Program coordinator and engineering faculty	ongoing		
Continue to invite diverse speakers to the APSC 1000/1100 seminars. Continue with the yearly Alumni seminar.	Program coordinator	ongoing		
Work with Communications & Marketing and College Advancement on establishing best practices in maintaining connections to Alumni. Investigate possible avenues (e.g. Linked-In page, Facebook).	Program coordinator	Summer 2021	Spring 2022	A Facebook page was created for the 2020-2021 Engineering Transfer cohort in July 2020. This facilitated communication with and between the students before the semester started.
Investigate how other engineering transfer programs maintain connections with their alumni, as well as their approach to alumni mentoring current students.	Program coordinator	Summer 2021	Spring 2022	
Explore, in partnership with other engineering programs in the Lower Mainland, the feasibility of coordinating an engineering competition.	Program coordinator and engineering faculty	Fall 2022	Ongoing	

Resources required to achieve this goal.

Resources Required
If Langara were to purchase in bulk EGBC student memberships for the Certificate students, the cost will be approximately $750/year for 60 students.

Goal 3: Enhancing the student recruiting process and student engagement/experience

List the Recommendation(s) this Goal addresses. Check the appropriate column to indicate if the Recommendation is from the Self-Study or External Review. Add or remove rows as needed.

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Removal of program preference comment for Certificate unless clarity is provided on how it may be demonstrated.		p. 8
Ch. 1 12. Work closely with the Registrar's Office on improving the admission process and the communication with applicants.	p. 14	
15. Work with Admissions and IE Admissions to streamline Diploma admissions from high school and India.	p. 14	
10. Work with IE Admissions to make clear that most overseas applicants do not qualify for the Certificate program. IE Admissions should communicate with the program coordinator before closing off applications.	p. 13	
11. Investigate the possibility of saving 2-3 seats in the Certificate for international applicants who need to write diagnostic tests in August in order be accepted into the program.	p. 13	
9. Work with the International Education department on ways to advertise the Diploma program overseas, including describing how the Diploma provides pathways to future education for IE students.	p. 13	
Improve International student enrolment to enhance diversity within the cohort.		p. 4
Ch. 1 14. Investigate whether it is worthwhile to offer a second intake (Spring) for the Diploma, to attract more international students, in particular students whose main purpose is graduating from a two-year program.	p. 14	
Improve enrolment of Indigenous students as this group is underrepresented within the cohort body. The Aboriginal Transfer Partnership with UBC is an opportunity that could be leveraged		p. 4
Ch. 1 8. Work with the Indigenous Education and Services to spread the word about the opportunities through the Diploma and the Aboriginal Transfer Partnership.	p. 13	
Enhance gender diversity. As diversity varies widely with engineering		p. 4

Recommendation	Self-Study (specify page #)	External Review (specify page #)
discipline, comparing with the first-year intake at UBC or SFU may be more informative		
Ch. 1 4. Consult with Institutional Research and Admissions about application and admission data for female students.	p. 13	
5. Improve the recruiting of female students.		
6. Work with the Langara College Foundation on financial incentives for female students (e.g. an entrance scholarship, tuition discounts, etc.).	p. 13	
7. Investigate sponsoring an ongoing Women in Engineering club, possibly with the help of Langara's 49 Women circle.	p. 13	
16. Present more information about the two programs on the program websites (e.g. video testimonies or Q&A's with past and current students, and information on the pathways available to the students of the two programs).	p. 14	
Ch. 5 1. Connect with incoming students before they arrive to Langara, creating a communication platform (e.g. a Facebook page) to foster connections with the program. This platform then can be used during the students' stay at Langara and later to connect with the students after they leave Langara.	p.46	
Ch. 1 1. Run the student survey again in two years; survey students during the second semester (or mid-to-end of November).	p. 13	
Ch. 2 3. Run the student survey after the two new Engineering Design courses (CPSC 1091 and CPSC 1491) and ENGL 1123 are implemented to see the effect of the new courses on student satisfaction.	p. 22	
On Pg. 30, it appears that number of credentials award is considerably less than the number of students enrolled. Barriers may exist to students who may have completed the credential requirements, but do not see the value in officially obtaining the diploma (or certificate). For the purposes of maintaining an alumni network, institutional reporting etc, it would be useful to identify these barriers, and encourage students to graduate officially.		p. 6
Develop a symbolic graduation award for those exiting the program; for example, graduates of the VIU program each receive a small lapel pin with the VIU Engineering label.		p. 9

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Organize project fairs to better engage with the broader community and professional associations (e.g. EGBC); likely as a cornerstone project within the engineering design curriculum (Recommendation #1 and #2). Content of CPSC 1090 and CPSC 1490 is appropriate, and the use of faculty judges applauded.		p. 6
Ch. 3 1. Present CPSC 1090 and CPSC 1490 projects to wider audience through "project fairs".	p. 36	
The Langara Makerspace is a welcome addition to the program, and the Committee applauds its use to expand the students' experiential learning opportunities. We would strongly recommend encouraging and expanding use of this space.		p. 7
Ch. 2 6. Require incoming Certificate to students complete an online Academic Conduct and Academic Integrity tutorial during the first few weeks of the semester.	p. 22	
The Committee commends the program for prioritizing student well-being by inviting the Langara College Counselling office to speak to students early in the term about available campus resources. Comparing how the Langara ETC compares to similar programs elsewhere may inform how best to mitigate student stress levels.		p. 8

Academic Plan Priority or Priorities this Goal supports. See the end of this document for the Academic Plan. Add or remove rows as needed,

Academic Plan Priorities
2.1. Strengthen and develop student support systems
2.2. Maintain enrolments to maximize student access and success
3.1. Increase recruitment, retention, and graduation of Aboriginal students
4.1. Position Langara as the school of choice for post-secondary international students in British Columbia
4.3. Provide international learning opportunities, both on campus and abroad for students and faculty

Planned Actions the program/department will complete to achieve this goal. Add or remove rows as needed.

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Submit an EdCo form for modifying the Program notes (https://langara.ca/programs-and-courses/programs/engineering/admission-requirements.html) to remove th reference about "program preference"	Program coordinator	Summer 2021	Summer 2021	This change will take place before the next admission cycle.
Work with the Registrar's Office (both Domestic and International Admissions) on improving the admission process for both programs, and on advertising to and communication with applicants.	Program coordinator	ongoing		It is expected that with the introduction of Workday Student, admission procedures and workflow will change.
Work with International Admissions to investigate whether it is worthwhile to offer a second intake (Spring) for the Diploma, to attract more international students, in particular students whose main purpose is graduating from a two-year program.	Program coordinator	Fall 2021	Summer 2022	
Work with Communications and Marketing on updating the program webpages to include more student testimonials, as well as more information about student pathways (e.g. transferability).	Program coordinator	Summer 2021	Spring 2022	
Improve recruitment and retention of female students. - Consult with Institutional Research and Admissions about application and admission data for female students. - Work with the Langara College Foundation and the 49 Women Circle on financial incentives for female students.	Program coordinator	Fall 2020	ongoing	A new award for female students in the two engineering programs, "Prism Engineering Award", was recently created and will be awarded the first time in Spring 2021.
Investigate sponsoring an ongoing Women in Engineering club, possibly with the help of Langara's 49 Women circle. Collect feedback from current and past students.	Program coordinator	Fall 2021	ongoing	

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Work with the Indigenous Education and Services to spread the word about the opportunities through the Diploma and the Aboriginal Transfer Partnership.	Program coordinator	Fall 2021	ongoing	
Encourage program students to graduate officially. Identify reasons students do not see the values in graduating (e.g. through student interviews or a survey).	Program coordinator	ongoing		Every January the program coordinator sends out a reminder to students to apply for graduation. Past students mention that some employers (e.g. co-op) require proof of graduation as condititon of employment.
Work with Communications and Marketing to explore the potential development of a symbolic graduation award, including cost.	Program coordinator	Spring 2022	Fall 2022	
Connect with incoming students before they arrive to Langara, creating a communication platform (e.g. a Facebook page) to foster connections with the program.	Program coordinator	ongoing		A Facebook page was created for the 2020-2021 Engineering Transfer cohort in July 2020. This facilitated communication with and between the students before the semester started.
Require incoming Certificate to students complete an Academic Conduct and Academic Integrity tutorial during the first few weeks of the semester.	Program coordinator	Ongoing, every September		For the past couple of years, the Student Conduct & Academic Integrity presented a seminar to the Certificate students on Academic Integrity.
Periodically (approximately every two years), run a student experience survey (similar to the one used for the Program Review) for both the Diploma and Certificate students.	Program coordinator	Spring 2022	ongoing	Run the survey every two years.
Organize "project fairs" to present CPSC 1091 and CPSC 1491 projects to a wider audience.	Program coordinator and engineering faculty	ongoing		
Continue the collaboration between engineering courses (APSC 1010, CPSC 1091, CPSC 1491) and the Makerspace.	Program coordinator and engineering faculty	ongoing		The engineering coordinator is a member of the recently established Makerspace Steering Committee.
Contact other institutions offering the Engineering Transfer programs to inquire about the student workload, in particular the number of hours students spend in class.	Program coordinator	Summer 2021	Summer 2021	The change from CPSC 1090 to CPSC 1091 did reduce the number of hours Certificate students spend in class during the Fall semester by two.

Resources required to achieve this goal.

Resources Required
Some funds might be required if we develop a graduation award.

Goal 4: Creating community and identity within the engineering cohort and its Instructors

List the Recommendation(s) this Goal addresses. Check the appropriate column to indicate if the Recommendation is from the Self-Study or External Review. Add or remove rows as needed.

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Ch. 1 2. Organize a meeting of instructors teaching in the Certificate at the beginning of each semester to familiarize instructors with the program and student workload.	p. 13	
3. Communicate program-wide learning outcomes to instructors teaching in the program.	p. 13	
Improve coordination between instructors teaching with both the certificate and diploma programs; Develop a common calendar to which all instructors have access for placement of exams, major assignments, seminars etc…		p. 4
Improve coordination between instructors teaching with both the certificate and diploma programs and/or create an Instructor Collaboration Committee for the program. Develop a common calendar to which all instructors have access for placement of exams, major assignments, seminars etc; Some institutions are able to schedule (in collaboration with the program chair) the final exam schedule for cohort programs first, to help avoid "bunching up" exams.		p. 6
Ch. 3 10. Work with instructors and the Registrar's Office to better coordinate project, midterm and final exam dates for the two Certificate cohorts, to avoid exam hardships for the students.	p. 36	
Develop common marking rubrics for courses and labs shared between multiple instructors; consistency of grading, particularly mark allocations for assignments, exams, etc for all students within a cohort is important for perception of fairness.		p. 6

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Ch. 3 8. Try to work with departments to schedule the same instructor for all sections of the Certificate courses, thus ensuring consistency in assessment between the two cohorts. If this is not possible, we should encourage instructors to plan common evaluations (e.g. midterms and/or final exams).	p. 36	
9. Communicate with instructors based on student feedback about clarity of assessment information, as well as variety of assessment methods, and about the workload in the program courses.	p. 36	
3. Work with program instructors on issues arising in this section, e.g. posting resources online; including more hands-on activities during class.	p. 36	
5. Encourage Certificate instructors to have office hours during students' scheduled free time.	p. 36	
6. Work with the Physics Department on physics course delivery for the Engineering students.	p. 36	
7. Work with the Physics Department to ensure the Physics help centre hours fit better with the Certificate students' timetable.	p. 36	
Ch. 4 6. Work with the science departments to provide more support fitting the timetable of Certificate students in the Learning Commons.	p. 41	
5. Investigate the possibility of scheduling 4 hours (out of 6) of CPSC 1155 (Program Design for Engineers) in a computer lab, or scheduling CPSC 1155 classes in convertible classrooms.	p. 41	
Ch. 2 5. Work with the departments supporting the programs on the suggestions about labs (e.g. lab manual for Chemistry, more hands-on training, more lab time, etc.).	p. 22	
Enhance partnerships between the communication classes and design/engineering core courses to improve student outcomes; a model similar to UVic or SFU.		p. 5
Ch. 2 4. Work with the instructors (in particular the Engineering, APSC, and English instructors) to find ways to better incorporate oral communication skills into the curriculum and to better prepare students to engage in informed debate on technology.	p. 22	
Ch. 3	p. 37	

Recommendation	Self-Study (specify page #)	External Review (specify page #)
16. Work with the English and Communications instructors, as well as the instructors of our engineering courses to better prepare students for written and oral communication, as well as to better prepare students to engage in informed debate on topics related to technology.		
Ch. 4 4. Investigate the possibility of priority room scheduling for the cohort classes within the Engineering Transfer Program.	p. 41	
2. Investigate the availability of rooms/study areas that students can use to work together in small groups.	p. 41	
3. Work with the Division Chair and the Dean to obtain a dedicated Engineering office space.	p. 41	
Obtain space and equipment for an "Engineering studio".	p. 14	
Create a dedicated space for students [...] with the goal to create community and opportunity for students to identify as 'engineering students'. These spaces are common at many institutions offering engineering programs, including transfer programs. This recommendation also may assist with issues related to coordinating assignments, curriculum etc... as identified in earlier chapters. Suggestions include: - Engineering Design Studio - Continuing and dedicated (open?) access to MakerSpace - Engineering student study / gathering space (External Review)		p. 8
Designate CPSC 1090, CPSC 1155, and CPSC 1490 as Applied Sciences/Engineering courses (i.e. APSC) as that would better link to their learning outcomes.		p. 4, 8

Academic Plan Priority or Priorities this Goal supports. See the end of this document for the Academic Plan. Add or remove rows as needed,

Academic Plan Priorities
1.1. Promote and support innovation and quality in teaching and curriculum design
1.2. Advance the application of innovative technologies that support learning and teaching
1.3. Maintain and expand experiential education opportunities
2.1. Strengthen and develop student support systems
5.1. Create and strengthen programming that encompasses the cross-disciplinary nature of sustainability

Planned Actions the program/department will complete to achieve this goal. Add or remove rows as needed.

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Share the results of the student survey (see Goal #3 actions) with program instructors, and work with instructors to address student comments and suggestions arising in these surveys.	Program coordinator	ongoing		The survey will tentatively run every second year, starting in Spring 2022.
Organize a meeting of instructors teaching in the Certificate at the beginning of each semester to familiarize instructors with the program and student workload. Communicate program-wide learning outcomes to instructors teaching in the program.	Program coordinator	ongoing		
Work with instructors and the Registrar's Office to better coordinate project, midterm and final exam dates for the two Certificate cohorts, to avoid exam hardships for the students.	Program coordinator	ongoing		Certificate instructors are already using a shared Excel file to coordinate dates for midterm exams and major projects.
Continue working with departments and instructors teaching in the Certificate to clarify departmental policies regarding assessments, and to encourage consistency in evaluating the two Certificate cohorts.	Program coordinator	ongoing		These are policies established by each department. Some departments (e.g. Math) have the same final exam for all sections of a course. In other departments (e.g. Physics) instructors of different sections of the same course may choose to write their own final exam.
Work with the science departments to provide more support fitting the timetable of Certificate students in the Learning Commons. Encourage Certificate instructors to have office hours during students' scheduled free time.	Program coordinator	ongoing		
Work with the instructors (in particular the Engineering, APSC, and English instructors) to establish partnerships between the communication classes and design/engineering core courses to improve student outcomes.	Program coordinator	ongoing		The English department schedules the instructors teaching ENGL 1123 and CMNS 2228 for Certificate students. Due to the large number of courses offered by the English department, the instructors assigned to teach these courses typically change from year to year.

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Investigate the possibility of priority room scheduling for the cohort classes within the Engineering Transfer Program.	Program coordinator	Fall 2021	Spring 2021	
Work with the Registrar's Office to schedule classes that require the use of computers (e.g. CPSC 1155, MATH 1252) into convertible classrooms.	Program coordinator	ongoing		
Work with Scheduling in the Registrar's Office to find available rooms/study areas that students can use to work together in small groups.	Program coordinator and Registrar's Office (scheduling)	ongoing		Most classrooms at Langara are utilized most of the time. The goal is to, each semester, identify classrooms that would be available at times that fit the Engineering Transfer students' timetable.
Work with the Division Chair and the Dean to obtain dedicated Engineering office space.	Program coordinator, Division Chair	ongoing		
Advocate for an Engineering Design Studio and/or a dedicated engineering study/gathering space to be included in the plans when Langara designs and builds a new building.	Program coordinator	ongoing		Currently there is no available space at the College to create a dedicated Engineering Studio. This idea should be strongly considered once Langara builds a new building. As most of the students' classes take place in the T-building, the ideal place would be in, or in close proximity to, the T-building.
Explore the advantages and disadvantages of designating CPSC 1091, CPSC 1155, and CPSC 1491 as Applied Sciences/Engineering courses (i.e. APSC).	Program coordinator	Fall 2021	Spring 2022	CPSC 1155 is a service course (Program Design for Engineering) offered by the CSIS department. CPSC 1090and CPSC 1490 (and their successors, CPSC 1091 and CPSC 1491) are engineering design courses.

Resources required to achieve this goal.

Resources Required
Office space for the engineering instructors.