

Action Plan: Chemistry

Date Self-Study was submitted to AQA: January 30, 2023

Date of External Review: February 21, 2023

Institutional Response

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Signed

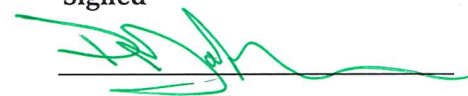


Dean

Oct. 10, 2023

Date

Signed



Provost and Vice-President

Oct 10, 2023

Date

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

Recommendation	Self-Study or External Review (include p.#)	Rationale
<p>Feedback from students is important to maintain relevant, engaging instructional practices. We understand that there is not a formal requirement at Langara to solicit student feedback once an instructor has accepted a Continuing contract. We encourage the Chemistry Department to foster a culture that supports the regular gathering of student feedback in each course section. Where doing so would create unmanageable workload for the Department Chair, we encourage the Dean to support this undertaking by providing adequate administrative resources.</p>	<p>Ext Rev: Pg 6</p>	<p>Best treated college-wide with a mandate from administration, and with the resources needed to anonymously collect and carefully disseminate the results.</p>
<p>In the Self-Study Report and during the site visit, it was noted that there is not enough office space for Chemistry faculty and staff. We understand the strain that rapid growth in enrolment has placed on College facilities and the challenges involved in providing additional office space. Nonetheless, we acknowledge the importance of providing adequate office space for faculty and staff and we encourage the College to prioritize the provision of additional office space as it continues to develop its campus plans.</p>	<p>Ext Rev: Pg 6</p>	<p>Acknowledged, but out of scope for departmental action.</p>

Goal 1: Inclusion

Academic Plan 2025 Lens (only include the title of the lens)
SOCIAL RESPONSIBILITY / COMMUNITY RELATIONSHIPS

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Chemistry is an experiential science requiring many hours of hands-on laboratory training over several courses to attain the necessary undergraduate-level competencies. This training must occur in environments that put student safety at the forefront. We wish to recognize Langara's commitment to equity, inclusion, and accessibility. Circumstances involving students who require individual classroom support tend to be more challenging when they take place in a chemistry laboratory setting. Langara Chemistry faculty and staff are regularly confronted with the realities of providing safe laboratory learning environments for an increasing number of students with short term or chronic disabilities and/or mental health issues. We recommend that the Department work with appropriate College administrators to ensure that adequate instructional support is available in all Chemistry laboratory classes, in particular those where there is currently only one employee for twenty-four students, to properly tend to safety concerns without deleterious consequences to curriculum delivery.		Pg 5
One of the recommendations in the Self-Study Report is to consider the possibility of creating an alternate path for students to satisfy the prerequisites for CHEM 1220, by completing CHEM 1118. During the site visit, members of the Chemistry Department shared with us that they would support such a change to the prerequisites. We also support this recommendation.		Pg 4

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Developing a “budget addition request” (BAR) for increased laboratory supervision to order to maintain safety while increasing classroom diversity.	Todd Stuckless Chemistry Chair. Angie Tran Lab Demo (d).	Fall 2023	Fall 2023	“Completion” date is for the submission of the BAR by the department chair.
Lowering the math prerequisite for chem1120, making it more accessible to Langara students.	Chemistry Dept.	Spring 2023	Summer 2023	Already EDCO approved.
Addition of math1175 to the prerequisite path for chem2250, and careful consideration of perhaps allowing the calculus requirement to be taken concurrently with 2250.	Department Chair. Instructor Yanguo Yang, Instructor Jim Rolke.	Summer 2023	Summer 2024	TCDC consultation to start August 2023, hoping to get EDCO approval for implementation Summer 2024.
Changing the prerequisite structure for chem1220, so that students who have been successful in 1120 but haven’t passed the MDT, can still qualify for 1220 by taking chem1118.	Chemistry Dept	Fall 2023	Fall 2024	Don’t want to rush this into the upcoming EDCO cycle, needs careful consideration regarding implementation.

Resources
No budget needed to just make the BAR.
Consultation with TCDC and RES

Goal 2: Communication

Academic Plan 2025 Lens (only include the title of the lens)
HOLISTIC STUDENT ENGAGEMENT AND SUPPORT

Recommendation	Self-Study (specify page #)	External Review (specify page #)
When asked what they wish they had known earlier in their academic journey, several students shared with us that they would have liked more clarity on how courses completed at other institutions are evaluated for transfer credit or as prerequisites at Langara. This concern seemed most common among international students, several of whom were unaware they could request prerequisite overrides and thus repeated lower-level courses needlessly. We recognize that this is an issue across the College and not one specific to the Chemistry Department. We acknowledge that the College has an established process for evaluating requests for prerequisite overrides and transfer credit, and we recommend that the Chemistry Department work with other departments involved in international student recruitment and admission, such as Langara Global and Registrar & Enrolment Services, to more clearly communicate these processes to international students before they register for their first semester courses.		Pg 4
We encourage the Chemistry Department to consider how it informs students of which Chemistry courses will likely be offered in upcoming semesters so that students can better plan their academic progress. We heard from Chemistry students and alumni about things they wish they had known at the beginning of their studies that would have made their time at Langara a better experience. The most common point of feedback was a desire for more information to help navigate the policies and procedures of the Institution.		Pg 6

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Publishing the schedule of our 2nd year courses in advance of each upcoming year, both on the departmental website and by poster throughout the T building.	Yanguo Yang Assistant Chair/Scheduling	Summer 2023	Ongoing	
Consulting with the REACH team to ensure potential students appreciate that the chemistry <i>programs</i> are “open-enrolment”, but that <i>courses</i> generally are not.	Chemistry Department Chair	Fall 2023	Fall 2023	The Recruitment, Enrolment, Admissions and Communications Hub being set up using the College’s new SIS technology for customer relation management.
Consulting with other science departments and GAC to develop a mechanism for coordinating with each other regarding credit transfers and degree requirements for highly qualified international students.	Math and Science Division Chair	Fall 2023	Fall 2023	

Resources
Consultation with RES

Goal 3: Collaboration

Academic Plan 2025 Lens (only include the title of the lens)
CURIOSITY, CREATIVITY, AND INNOVATION: CREATE THE FUTURE TOGETHER

Recommendation	Self-Study (specify page #)	External Review (specify page #)
At the institutions to which Langara's Chemistry curriculum most closely aligns, UBC and SFU, common final exams are used for all sections of the same course. While we acknowledge that there are some advantages to allowing instructors to prepare unique final exams for each course section, we recommend that the Department consider, perhaps as a trial for several semesters, preparing common exams for all sections of the same course. This might address any perceptions of variability in assessment and grading practices across the Department.		Pg 5
The Self-Study Report describes the challenges of scheduling Chemistry classes to avoid conflicts with other required courses. This point was also raised during our meeting with Chemistry students, who described delays in completing their program and transfer requirements due to scheduling conflicts. We acknowledge the work done by Department Chairs in the Faculty of Science to minimize scheduling conflicts. We recommend that additional work be done to explore solutions that would minimize delays in student progression due to scheduling conflicts		Pg 4
Alumni who transferred to UBC and SFU after their second year at Langara shared their experiences of renewed uncertainty when they began their first semester at their new institution. The Chemistry Department may wish to consider ways to improve students' experiences as they transfer from Langara to other institutions.		Pg 6

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Sharing a common final exam between sections of a course with different instructors.	Chemistry Dept	Summer 2023	Ongoing	Three instructors of chem1118 will collaborate on a shared final exam in the Summer of 2023. Hopefully a positive experience that will encourage others to join next semester.
Initiate discussions with Biology and other Departments regarding clear pathways for students pursuing biochemistry, medical sciences, pharmacology and other programs that have both chemistry and biology as the core subjects. So university transfer students can more closely replicate university programming.	Todd Stuckless	Fall 2023	Ongoing	

Resources

Goal 4: Exploration

Academic Plan 2025 Lens (only include the title of the lens)
TRANSFORMATIONAL LEARNING EXPERIENCES

Recommendation	Self-Study (specify page #)	External Review (specify page #)
Investments in laboratory infrastructure have allowed students to be involved in applied research activities not typically available until later in an undergraduate- or graduate-level program. We encourage Langara to continue supporting excellence in scholarly activities through investment in facilities, equipment, and personnel for both research and teaching laboratories		Pg 5
Langara Chemistry students have exceptional opportunities to be involved in applied research projects. We wish to commend the Department's work to establish its applied research program. Research experience is of great value to students when they apply to academic programs and professional positions. We encourage the Department to consider ways that these achievements can be formally documented and recognized by the Institution.		Pg 6
The Chemistry Diploma and Associate Degree are among many programs at Langara that were first developed with the aim of allowing a pathway for transfer to a bachelor's degree. Since the development of these programs, the Institution has seen a rapid increase in the number of students who plan to enter the workforce immediately after graduating, rather than transferring to a baccalaureate program. We acknowledge the challenges of designing a program curriculum that serves both aims. Nonetheless, we encourage the Chemistry Department to consider ways that it could better support pathways for both university transfer and meaningful employment after graduation. To better inform this work, the Department might wish to consider forming a program advisory committee, consisting of representatives of employer groups, community organizations, and professional associations. In addition to supporting efforts to create employment pathways for graduating students, this committee may be able to contribute to the Department's applied research program.		Pg 7

Recommendation	Self-Study (specify page #)	External Review (specify page #)
<p>Langara serves as an important pathway for students aiming to complete a Bachelor of Science Degree at a four-year institution. We support the Department's plan to consult with receiving institutions, mainly UBC and SFU, to further align course-level and program-level learning outcomes, as needed. We also support the Department's recommendation to refine its curriculum map, linking course-level and program-level learning outcomes.</p>		Pg 5
<p>Continuous professional development allows instructors to stay current with changing educational and research practices and to adapt to changing student needs. We wish to recognize the efforts of Chemistry faculty to engage in continuous, relevant professional development activities, and we encourage continued support from the Institution for these efforts.</p>		Pg 6

Planned Actions	Led by	Begin on	Anticipated Completion	Notes
Working with TCDC to draw up a curriculum map to guide instructors in arriving at program goals. Particularly important for the Diploma, which might incorporate new more vocational material.	Chemistry Dept	Fall 2023	Fall 2026	
Working with TCDC to further refine our course descriptions and course learning outcomes, to better guide students.	Chemistry Dept	Fall 2023	Fall 2028	
Investigate forming a program advisory committee, consisting of representatives of employer groups, community organizations, and professional associations.	Chemistry Dept and Dean's Office.	Spring 2024	Spring 2028	Consult also with the Langara Applied Research Center.
Investigate leveraging the ARC analytical instrumentation hosted by the Chemistry Department, for micro-credentials in chemical analysis.	Chemistry Dept.	Spring 2024	ongoing	Consult also with the Langara Applied Research Center.
Develop the use of technology platforms available for the secure and verified holding of portfolios ("Pebble Pads"), to help SWAP/WOC students doing research work gain recognition of their experiential learning.	Todd Stuckless	Fall 2023	ongoing	Consultation with EdTech

Resources
A lot of TCDC consultation. A lot of Departmental PD labour.