

Implementation Plan

1 - Cover memo

Department of	<u>Chemistry and Biochemistry</u>	Year of program re- view	<u>2024</u>
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To: Deputy Provost and Vice-Provost, Student Life and Experience
From: Faculty Dean
Faculty of: Arts and Science
Date: September 15, 2026

Please find enclosed the finalized Implementation Plan for the Department cited above as part of the academic program reviews process. This Plan was duly discussed with:

- ☒ The Department Chair
- ☒ The Dean of Graduate Studies (if applicable)

As mentioned in the Concordia University Academic Program Review Manual, 6th edition, September 2024, the Faculty and Department will follow-up on this Plan in two years, when prompted by your office.

Sincerely,

Faculty Dean's name Pascale Sicotte

Faculty Dean's signature *Pascale Sicotte*

PROGRAM REVIEW DOSSIER

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

The review was initiated in 2024.

The dossier contains the following:

Document	Finalized on:
1. Department Program Review Committee (DPRC) Reports	August 2025
2. Report from External Evaluators	October 30, 2025
3. University Program Review Committee (UPRC) Report	April 27, 2026
4. Summary chart	June 4, 2026
5. Dean's Implementation Plan	September 15, 2026
6. Progress Report	To be initiated Fall 2028

Note:

- *The External Evaluators' visit was held from October 6 to 8, 2025.*

Implementation Plan

2 - Summary

The Department of Chemistry and Biochemistry's mission is excellence in teaching and research in both fields by developing and maintaining strong programs which meet the high standards of both academic and industrial communities. Faculty members have expertise in the areas of Analytical, Organic, Inorganic, and Physical Chemistry and Biochemistry. The Department participates in the Kaié:ri Nikawerá:kel Indigenous Bridging Program for BSc Chemistry and Biochemistry students which provides alternative entry to eligible Indigenous students with non-traditional academic backgrounds to transition to the program of their choice. At the undergraduate level, the Department offers a major, specialization, and Honours in both Chemistry and in Biochemistry, a specialization and Honours in Environmental and Sustainability Science, a minor in Chemistry, and a MSc and PhD in Chemistry as well as a MSc/MASc in Nanoscience and Nanotechnology at the graduate level. The Department also participates in the Institute for Co-operative Education. As of January 1, 2025, the Department has 22 tenured or tenure-track faculty (1 jointly appointed with another unit) and 2 Teaching Professors (Senior Lecturers) with 1 new hire arriving in 2025. The Department staff consists of 10 technical staff members and 3 administrative staff (shared Department Administrator, Graduate Program Assistant, and Undergraduate Program Assistant). Faculty members are associated with Centre for Biological Applications of Mass Spectrometry (CBAMS), the Centre for Research in Molecular Modeling (CERMM), the Centre for Structural and Functional Genomics (CSFG), and the Centre for Nanoscience Research (CENSR), and the Centre for Nanoscience Research. In the period under evaluation, the Department offered 38 undergraduate and 11 graduate courses to approximately 145 undergraduate and 27 graduate students per year. Approximately 17% of Chemistry and Biochemistry courses are taught by part-time faculty members (average of 10 a year). The BScs in Chemistry and Biochemistry are accredited with the Ordre des Chimistes du Quebec.

The strengths of the unit include the high quality of the programs, particularly in-depth laboratory training at the undergraduate level accompanied by strong theoretical instruction and graduate students' exceptional access to cutting-edge research facilities. Exceptional facilities for the Department of Chemistry and Biochemistry include the notable research profiles of faculty members as evidenced by awards and recognitions internally and externally and the level of connection between faculty members across disciplines and universities beyond formal membership in research centres. Opportunities for change identified by the Department include increased scientific communication training as well as professional development for their students and the structure of courses with lab components including constraints on offerings and weights of grading components.

The Faculty of Arts and Science has reviewed the Department Program Review Committee, External Evaluator, and University Program Review Committee reports and provides the following recommendations for implementation. Joint solutions to shared issues among Science units are encouraged wherever possible. A recommendation to standardize lab credits and hours which emerged from the Program Reviews in Physics and Chemistry should be examined across all

Science units where feasible as a strategy to improve student experience and success in introductory lab courses.

Implementation Plan

3 - Recommendations

The Faculty Dean is invited to include a numbered list of recommendations for improvement, as well as a rationale and implementation schedule (an Excel spreadsheet is also available by request to the Program Review Lead).

Recommendations	Prioritized time-line for completion	Responsibility	Dean's comments and resource implications
1. Identify and address obstacles to student progress through programs, including course sequencing, lab sections, and assessment methods, to increase student success and retention without risking accreditation.	Mid-term (2-3 years)	Department, CTLS, FAS, SGS, Ordre	Careful analysis of the use of resources will be reviewed by the Dean to see if redistribution is possible for additional lab support.
Rationale: UPRC-1, 3; EE-3.1, 3.2, 4, 5, 6, 7.1, 7.2, 10.3, 13; DPRC-4.2, 4.3. EEs identify obstacles at the undergraduate level in CHEM 205, 221, and 271 which fill quickly given lab capacity restrictions, course sequences with many prerequisites that mean high advising needs and significant delays should students fail or drop a course. EEs suggest seeking to balance the number of labs students must complete per semester across the program and systematically examining the content of all lab courses together to remove redundancy in the development and demonstration of laboratory knowledge and skills where possible.			
2. Discuss and develop mechanisms for cohort building and mentoring to support official advising of especially new students through program milestones.		Department, SGS, Dean of Students, FAS, CTLS, Student Success Centre	

Rationale: EE-1, 2; UPRC-2; DPRC-7.10, 10.2. EEs commend the Department for the development of e-newsletters and say students appreciate University Orientation, but raise concerns that students need additional support in registration processes, strict program progression, and access to useful information about the University. Given limited staff time availability and students potential nervousness about asking advisors, peer approaches are recommended. Peer support and increased student engagement may also increase the appeal of Concordia for Francophone students.			
3. Build on existing strengths in experiential learning and professional development at the undergraduate and graduate levels by reviewing Co-op opportunities and cultivating new opportunities for practical hands-on experience. Alumni engagement, professional development workshops, GradProSkills workshops, training in project planning, research opportunities for undergraduates particularly in Biochemistry are concrete suggestions.	Short to mid-term (1-3 years)	Department, GradProSkills, Co-op Institute	Careful analysis of the use of resources will be reviewed by the Dean to see if redistribution is possible for additional training support.
Rationale: EE-8, 9; UPRC-5, 6; DPRC-7.3, 7.9, 8.1, 8.2, 8.3, 8.8, 9.5, 10.10, 11.4. EEs and the UPRC praise the quality of training and facilities in Chemistry and Biochemistry but identify several areas that could be further developed including graduate level project management and research methods, undergraduate opportunities in Biochemistry, additional training in instrumentation, scientific communication, and increased engagement with practicing researchers in industry.			
4. Review the Department's curriculum to refresh catalog listings at undergraduate and graduate levels and to ensure alignment of learning objectives, program objectives, and students' career development. This is an opportunity to include experienced part-time faculty members, alumni	Short to mid-term (1-3 years)	Department, FAS, UCS	

working in the field, and students in the discussions and integrate training to address emerging societal priorities into the curriculum.			
Rationale: UPRC-4, 6; EE-6, 7.1, 8, 10.1, 13, 14; DPRC-4.5, 7.1, 9.1, 9.2, 9.4, 9.7, 10.3. This recommendation provides a means to address the time to completion and retention challenges identified by the DPRC and EEs and to use constrained teaching and lab capacity more effectively. This exercise may help with recruitment by having Calendars (and websites) match offerings and provides the opportunity to adjust and clarify progression through programs and the communication of program pathways to students.			