

Implementation Plan: The programs from the *Department of Chemistry and Biochemistry*

(Based on the standard committee reports, and an update, provided in September 2021).

From the 2025 Undergraduate Calendar:

Chemistry is the science that examines the structure of substances and the reactions to produce novel and useful products. Biochemistry is that part of chemistry which deals with chemical changes occurring in biologically relevant systems; i.e. changes taking place in living cells that are responsible for life processes.

The mission of the Department is fourfold: (i) excellence in teaching and research in the fields of chemistry and biochemistry; (ii) develop and maintain strong undergraduate and graduate teaching programs; (iii) develop and maintain state-of-the-art quality research; and (iv) meet the high standards of the scientific and industrial communities. The Department's programs have strengths in both the applied and theoretical fields.

The undergraduate Honours and Specialization in Chemistry and Biochemistry Programs are accredited by the ***Ordre des Chimistes du Québec***.

It is difficult at this time to limit the field of view to the 2014 period, and we provide here a snapshot of the programs when this appraisal was initiated, and now. In 2014, the Department had 9 programs and 23 full-time faculty members. In 2024, the unit had 11 programs and 24 full-time faculty members. The table shows relative stability in teaching resources, despite change.

| Data | 2014 | 2024 (last Calendar with Masthead) |
|-----------------|--|--|
| Programs | Undergrad <i>Biochemistry</i> <ul style="list-style-type: none"> BSc Honours in Biochemistry BSc Specialization in Biochemistry BSc Major in Biochemistry <i>Chemistry</i> <ul style="list-style-type: none"> BSc Honours in Chemistry BSc Specialization in Chemistry BSc Major in Chemistry Minor in Chemistry Grad <ul style="list-style-type: none"> Chemistry PhD Chemistry MSc | Undergrad <i>Biochemistry</i> <ul style="list-style-type: none"> BSc Honours in Biochemistry BSc Specialization in Biochemistry BSc Major in Biochemistry <i>Chemistry</i> <ul style="list-style-type: none"> BSc Honours in Chemistry BSc Specialization in Chemistry BSc Major in Chemistry Minor in Chemistry <i>Environmental and Sustainability Science</i> <ul style="list-style-type: none"> BSc Honours in Environmental and Sustainability Science BSc Specialization in Environmental and Sustainability Science Grad <ul style="list-style-type: none"> Chemistry PhD Chemistry MSc |
| # programs | 9 | 11 (+2 new programs) |
| Faculty members | <i>Chair</i> JOHN A. CAPOBIANCO, <i>Professor</i> <i>Distinguished Professors Emeriti</i> MARK DOUGHTY | <i>Chair</i> PAUL JOYCE, <i>Professor</i> <i>Distinguished Professors Emeriti</i> MARK DOUGHTY |

| | | |
|-------------|---|--|
| | OSWALD S. TEE <i>Professors</i> PETER H. BIRD ANN M. ENGLISH YVES GÉLINAS PAUL JOYCE MARCUS F. LAWRENCE GILLES H. PESLHERBE JOANNE TURNBULL <i>Associate Professors</i> LOUIS CUCCIA GEORGE DÉNÈS CHRISTINE DEWOLF PAT FORGIONE GUILLAUME LAMOUREUX HEIDI M. MUCHALL XAVIER OTTENWAELEDER PETER PAWELEK JUSTIN B. POWLOWSKI CAMERON SKINNER CHRISTOPHER WILDS <i>Assistant Professors</i> JUNG KWON (JOHN) OH DAJANA VUCKOVIC <i>Senior Lecturers</i> SÉBASTIEN ROBIDOUX CERRIE ROGERS | ANN M. ENGLISH OSWALD S. TEE <i>Professors</i> JOHN A. CAPOBIANCO LOUIS CUCCIA CHRISTINE DEWOLF PAT FORGIONE YVES GÉLINAS JUNG KWON (JOHN) OH PETER PAWELEK GILLES H. PESLHERBE CHRISTOPHER WILDS <i>Associate Professors</i> GEORGE DÉNÈS BRANDON FINDLAY ASHLEE HOWARTH MAREK MAJEWSKI HEIDI M. MUCHALL RAFIK NACCACHE XAVIER OTTENWAELEDER INGO SALZMANN CAMERON SKINNER DAJANA VUCKOVIC <i>Assistant Professors</i> MELISSA PASSARELLI XIANMING ZHANG <i>Senior Lecturers</i> GREGOR KOS CERRIE ROGERS |
| Full-time # | 23 (7 retirements before 2024) | 24 (8 hires since 2014) |

FAS assessment and recommendations. The Faculty of Arts and Science has reviewed the Department Appraisal Committee, External Examiners, and University Appraisal Committee reports, and warmly thanks the committees, as well as the external examiners and department chairs, for their reports and oversight.

From a 2021 update – The Chair (at the time) gave an update of advances (bolded) vs. the UAC Recommendations:

- **Strategic visioning** has been started and the unit has formed a Chair's Advisory Committee.
- **Personnel** - There have been a number of restructuring operations for administrative and technical staff.
- **Program issues:** The department has adjusted their coursework to adapt to the *Ordre des Chimistes du Québec* requirements, and will look into the *Canadian Society for Chemistry accreditation*. They have set a system for an annual undergraduate review of student progress. They are also regularly reviewing the possibilities for **cross-listing** courses. On the graduate front, they have also addressed graduate **fast-tracking** and PhD **time to completion**.

- On the research side, **grantsmanship mentoring** has taken place for NSERC and FRQ grants, as well as a comprehensive process for the search for **alternative sources** of funding. **Graduate student funding packages** have also been updated, increasing the floor. Roles for **awards committees** have been specified.
- A department **space** committee has been instituted, along with a space policy.

Following the reading of all the committee reports and update, here are FAS recommendations. Future updates can be made in discussions, and to coordinate the next cycle of program reviews.

| Outline | Decanal Recommendation | Referenced recommendations | Area | Actor |
|--|---|--|---------------------|---|
| <i>Shorter-term (in the next year)</i> | 1. Design a strategic plan for the unit, its programs, and its personnel. This should include: <ul style="list-style-type: none"> ○ A review of programs, graduate and undergraduate as to their content and progression (continuing on recent work, in the context of the collaborations with Chemical Engineering, Nanoscience/Nanotechnology, and in environmental and sustainability science). ○ An update on the personnel plan, and the plan for hiring of faculty members and staff. ○ An update on the accreditations, and the tracking of alumni. | UAC-1, 2, 3, 4, 5, 11, 15, 17, 18, 20, 22. | Programs & Strategy | <ul style="list-style-type: none"> • Dept • FAS • Univ |
| | 2. Coordinate a review to optimize undergraduate admission, recruitment and advising, in the context of the FAS strategic enrolment planning. | UAC-12, 13, 23. | Students | <ul style="list-style-type: none"> • Dept • FAS |
| <i>Medium-term (within the next 3 years)</i> | 3. Continue to implement faculty member mentoring, for research and teaching performance, connecting across the university, and finding alternative sources of funding. | UAC-7, 16. | Research | <ul style="list-style-type: none"> • Dept • Univ |
| | 4. Continue the conversation on space planning with the FAS. | UAC-9, 10. | Space | <ul style="list-style-type: none"> • Dept • FAS |
| | 5. Review the graduate student funding packages. | UAC-16. | Programs & Research | <ul style="list-style-type: none"> • Dept • FAS |
| <i>Longer-term (within the next 5 years)</i> | Kept for the next appraisal / program review process. | | | |

The FAS is looking forward to updates on these activities and ensuing discussions, as well as contributing to the next cycle of *Program Reviews*.