



Queen's University

Final Assessment Report: Executive Summary

Programs Reviewed: BA, BSc, BScH, MSc, MAsC, PhD in Chemistry

In accordance with Queen's University Quality Assurance Processes (QUQAP), this Final Assessment Report provides a synthesis of the external evaluation, internal responses and assessment of the above programs. This report identifies the significant strengths of the program, and opportunities for program improvement. It sets out and prioritizes the recommendations that have been selected for implementation.

An implementation plan is attached that identifies

- who will be responsible for acting on and monitoring progress on the recommendations,
- any resource or governance implications resulting from the recommendations, and
- timelines for implementation of the recommendations.

Summary of Review

- 1) The department's self-study was reviewed by the Dean, Faculty of Arts and Science, Vice-Provost and Dean, School of Graduate Studies and the Vice-Provost (Teaching and Learning). It was approved on 12 December 2016.
- 2) The review team visit took place on 16-17 January 2017. The review team members were
 - i. Dr. Kim Baines, Western University
 - ii. Dr. Robert Burk, Carleton University
 - iii. Dr. Mark Workinten, Western University
 - iv. Dr. Mark Chen, Queen's University
- 3) The visit included a tour of facilities and meetings with
 - i. Students (undergraduate and graduate)
 - ii. Faculty
 - iii. Staff
 - iv. Cognate Heads of Departments
 - v. Library Representative
 - vi. Dean and Associate Dean, Faculty of Arts and Science
 - vii. Vice-Provost and Dean and Associate Dean, School of Graduate Studies
 - viii. Vice-Provost (Teaching and Learning)

- 4) The review team reported on 15 February 2017. Responses to the review team report were provided by the Head of the Department of Chemistry, the Dean of the Faculty of Arts and Science and the Vice-Provost and Dean, School of Graduate Studies.
- 5) The Senate Cyclical Program Review Committee considered all the documentation at its meeting on 23 May 2017, and reported to the Provost on the programs' strengths, opportunities for enhancement, and recommendations for improvement.

The following strengths were noted:

- Excellent student experience. Students graduate with strong foundations as well as knowledge at the forefront of the discipline
- Leadership that is committed to program quality and broad consultation with stakeholders
- Enviably record in equity (i.e. female faculty). Chernoff Hall is a spectacular facility and is accessible
- Mix of disciplines in several courses – a hallmark of Queen's chemistry program and rightfully a source of pride
- Excellent student employment outcomes

The following opportunities for enhancement were noted:

- Build on a strong foundation of quality programs and facilities to further enhance offerings based on a broad-based, consultative, comprehensive curriculum and course review
- To take advantage of an engaged and generally satisfied student body to seek their views on student workload and preparedness for upper level courses (e.g. adequate math skills, CHEM 112).
- In a similar vein, seeking graduate student input on course offerings and mentorships in terms of meeting needs to support progress toward timely degree completion
- Embrace the increased transparency of the budget model to explore the impact of increasing domestic graduate enrolment, improving completion times, which could incentivize change leading to added financial resources
- To secure stable leadership for the department so it can focus on longer term strategic planning and goal setting to enhance and sustain excellence in undergraduate and graduate education

The academic programs in the Department of Chemistry have been approved to continue.

Date of next review: 2024-2025.

Prepared by Vice-Provost (Teaching and Learning)

June 5, 2017



Implementation Plan

Recommendations		Proposed Follow-up	Responsibility for Leading Follow-up	Responsibility for providing Resources	Timeline for Addressing Recommendation
1.	Reviewers recommended that the Department formulate a plan to critically assess the effectiveness of the assessment methods in ensuring that learning objectives are being met. This will allow for constant improvement of the program quality in the future.	Launch thorough review of the undergraduate curriculum in conjunction with the Centre for Teaching and Learning	Department Head in conjunction with Associate Dean, Arts and Science	Human resources to be provided by Department	Teaching Departmental Retreat to be scheduled for Spring 2018
2.	Reviewers recommend that the Department review and possibly change how CHEM 112 is delivered in order to ensure that students are better prepared for subsequent chemistry courses, and to allow the instructors academic freedom in deciding how the course should be delivered.	Continue review of CHEM 112 by committee formed in October 2016	Department Head in conjunction with Associate Dean, Arts and Science	Human resources to be provided by Department	List of recommendations ready by mid-summer 2017, in time for a Fall 2017 curriculum change submission to the Faculty of Arts and Science, and implementation of the new format for the 2018-19 academic year

Recommendations		Proposed Follow-up	Responsibility for Leading Follow-up	Responsibility for providing Resources	Timeline for Addressing Recommendation
3.	Reviewers recommended that the department review the math requirements for the Chemistry undergraduate program and adjust the requirements as needed to ensure the students are well prepared for upper level undergraduate courses, which require advanced skills in mathematics	Department to discuss "math for chemists course with the mathematics department	Department Head in conjunction with Associate Dean, Arts and Science	Human resources to be provided by Department	Implemented for 2018/19 academic year
4.	Reviewers recommended that the University administration extend the process of student assessment of teaching to graduate courses and reduce the number of responses required for reporting purposes. At a minimum, such evaluations should be mandatory and the results released if only to assess learning outcomes in graduate courses.	Continue discussions between Department and School of Graduate Studies about course evaluation and assessment of teaching	Department Head in conjunction with Associate Dean Graduate Studies	Human resources to be provided by Department	Ongoing
5.	The Department is encouraged to review the graduate course offerings in light of current and past enrolments.	Initiate review of enrolment in graduate courses and scope of topics	Department Head in conjunction with Associate Dean Graduate Studies	Human resources provided by Department	Review begin summer 2017; suggested changes approved during 2017/18 academic year; new courses offered 2018/19 academic year

Recommendations		Proposed Follow-up	Responsibility for Leading Follow-up	Responsibility for providing Resources	Timeline for Addressing Recommendation
6.	Reviewers recommend that the Department review the times-to-completion for PhD students who have entered the PhD program after successfully completing a candidacy exam while in the MSc program and that they take steps to ensure times-to-completion are reasonable	Initiate review of times-to-completion	Department Head in conjunction with Associate Dean Graduate Studies and Graduate Committee	Human resources provided by Department	Minor changes to be approved and applied in 2017/18 academic year. Program/calendar changes approved for 2018/19.
7.	Reviewers recommend that the University be mindful of the number of administrative tasks being downloaded to faculty and Departments, particularly those that take the faculty away from their primary responsibilities of teaching and research. Adequate numbers of departmental administrative staff are needed.	Department Head to work with the Associate Dean Arts and Science to assess complement of administrative staff and determine if more is needed	Department Head in conjunction with Associate Dean, Arts and Science	The University	Ongoing
8.	Reviewers suggest that the Department improve the TA experience by enhancing the training provided during the Chemistry TA Day at the	Continued discussions between TA assignment committee and the Chemistry Graduate Student Society	Department Head in conjunction with Associate Dean,	Human resources provided by Department	Review of Chemistry TA Day to take place Summer 2017

Recommendations	Proposed Follow-up	Responsibility for Leading Follow-up	Responsibility for providing Resources	Timeline for Addressing Recommendation
beginning of the academic term and by consulting with TAs regarding reasonable expectations and time requirements for various tasks.		School of Graduate Studies		
9. Reviewers recommend that the Department examine the workload in lab courses and consider changing the format of some of the lab write-ups to lessen the workload while at the same time maintaining, or even enhancing, the learning.	Continued discussion with UG chair and lab instructors	Department Head in conjunction with Associate Dean, Arts and Science	Human resources provided by Department	Discussions to begin in April 2017, tentative plan to take shape in Summer 2017, finalization in 2017-18 academic year and incorporated into a new lab manual in the Summer 2018
10. Reviewers observed either a lack of departmental plan, or lack of widespread awareness of a plan, if one exists. As such, they recommend creating a plan or updating the 2014-15 plan, "Department of Chemistry, Overview and Staffing Strategy," and circulating it widely for comments. Among other items, planning should address: <input type="checkbox"/> faculty hiring plans	Initiate discussion with departmental leadership team (Head, two Associate Heads, and the Advancement and Planning Committee)	Department Head in conjunction with Associate Deans Arts and Science and School of Graduate Studies	Human resources provided by Department	Ongoing over the next 1-2 years

Recommendations		Proposed Follow-up	Responsibility for Leading Follow-up	Responsibility for providing Resources	Timeline for Addressing Recommendation
	<input type="checkbox"/> succession planning and departmental leadership				
11.	Reviewers recommend that the Department develop a long-term plan for equipment replacement, since equipment has been replaced on an ad-hoc basis up until now.	Department to plan for infrastructure repair and replacement	Department Head in conjunction with Associate Dean, Arts and Science	Human resources provided by Department	Ongoing
12.	Reviewers recommend that the department continue to develop a strategic approach to recruiting high quality graduate students.	Initiate discussions between Department and School of Graduate Studies and develop recruitment plan	Department Head in conjunction with Associate Dean, School of Graduate Studies	Human resources provided by Department	Ongoing
13.	Reviewers noted multiple concerns that had previously been raised in the department's last Internal Academic Review, but had not since been addressed. Moving forward, the Department should make every	Recommendations to constantly added to the agenda of faculty retreats and/or departmental meetings	Department Head	Human resources provided by Department	Ongoing

Recommendations	Proposed Follow-up	Responsibility for Leading Follow-up	Responsibility for providing Resources	Timeline for Addressing Recommendation
effort to return regularly to the recommendations set out by the review team during the years between cyclical reviews.				

The Dean, Faculty of Arts and Science and the Vice-Provost and Dean School of Graduate Studies shall be responsible for monitoring the implementation plan. The details of progress made will be presented in writing to the Provost and Vice-Provost (Teaching and Learning) and filed in the Office of the Provost and Vice-Principal (Academic). Monitoring reports will be posted on the university web site.

Final Assessment Report & Implementation Plan

June 12, 2017

Approval Date

Vice-Provost (Teaching and Learning)


Signature

Vice-Provost and Dean School of Graduate Studies


Signature

Dean, Faculty of Arts and Science


Signature

**Final status of the Academic Programs in the
Department of Chemistry**

Approved to Continue

Date of next program review

2024/25 Academic Year