

***SUBMITTED TO OUCQA FOR INFORMATION – May 31, 2017***

***APPROVED BY TRENT UNIVERSITY’S SENATE COMMITTEE – April 4, 2017***

**CYCLICAL PROGRAM REVIEW COMMITTEE (CPRC)**

**FINAL ASSESSMENT REPORT & IMPLEMENTATION PLAN**

**MSc & PhD ENVIRONMENTAL AND LIFE SCIENCES**

*(March 15, 2017)*

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| **DEGREE PROGRAMS BEING REVIEWED** | * **MSc Environmental and Life Sciences**
* **PhD Environmental and Life Sciences**
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| **EXTERNAL REVIEWERS** | **Dr. Patricia Chow-Fraser, McMaster University****Dr. Bryan Neff, University of Western Ontario** |
| **INTERNAL REPRESENTATIVE** | **Dr. Bill Atkinson, Physics & Astronomy, Trent University**  |
| **YEAR OF REVIEW** | **2015-2016** |
| **DATE OF SITE VISIT** | **March 23 – 24, 2016** |
| **DUE DATE FOR IMPLEMENTATION REPORT BY ENLS** | **January 31, 2018** |
| **DATE OF NEXT CYCLICAL REVIEW** | **2022-2023** |
| **DATE PREPARED BY CPRC** | **March 1, 2017** |
| **DATE APPROVED BY PROVOST & VP ACADEMIC** | **March 17, 2017** |
| **SIGNATURE OF PROVOST & VP ACADEMIC** | Provost Muldoon  |

The Environmental & Life Sciences Graduate MSc and PhD degree programs (ENLS) are interdisciplinary, thesis-based and combine strengths in Biology, Chemistry, Environmental Resource Science, Forensic, Science, and Geography.

External reviewers commended the interdisciplinary nature of the degree programs as being ‘a major strength, placing ENLS at the forefront of Canadian graduate programs in terms of the scope of the training and quality of the research.’ The Dean agreed, indicating that the Environmental & Life Sciences Graduate Programs represent ‘a model for how interdisciplinary programs could and should function. Furthermore, a distinctive feature of the ENLS programs is the ‘exceptional collaboration with associate faculty from other organizations especially MNRF, which helps to provide superior experiential training to students. The contributing faculty as a whole are excellent, based on various publication and funding metrics’.

The Programs draw from a diversity of university centres and institutes which provide students with ‘state-of-the-art technologies, expertise, funding and university-government-industry partnerships, all of which facilitate cutting-edge training and research.’

In concluding remarks, reviewers noted the ‘the dynamic interplay of research, teaching and learning’ which encourages the ‘exploration of the creative links between fields of study and a critical engagement with the world’. All of which prepare ‘students to make significant contributions by providing them a distinctive science education which is enhanced by experiential learning and interdisciplinary approaches.’

**SUMMARY OF PROCESS**

During the 2015-2016 academic year, the MSc and PhD in Environmental and Life Sciences underwent a review. Two arm’s-length external reviewers (Dr. Patricia Chow-Fraser, McMaster University and Dr. Bryan Neff, University of Western Ontario) and one internal member (Dr. Bill Atkinson, Trent University) were invited to review the self-study documentation and then conducted a site visit to the university on March 23rd and 24th, 2016.

This Final Assessment Report (FAR), in accordance with Trent University’s Institutional Quality Assurance Policy (IQAP), provides a synthesis of the cyclical review of the graduate degree programs. The report considers four evaluation documents: the Self-Study, the External Reviewers’ Report, the Program Response, and the Decanal Response.

A summary of the review process is as follows: the academic unit(s) completed a self-study which addressed all components of the evaluation criteria as outlined in Trent’s IQAP. Appendices included: Course Syllabi; Curriculum Vitae; Learning Outcomes; Enrolment, Retention and Student Data; University Calendar Copy; University Degree Requirements; TUFA Collective Agreement; Publications; and the Program Handbook. Qualified external reviewers were invited to conduct a review of the two degree programs which involved a review of all relevant documentation (self-study, appendices, IQAP) in advance of the site visit. A two-day site visit took place where reviewers met with senior administration, faculty and students, and toured relevant facilities.

Once the external reviewers’ report was received both the Graduate Program and Dean provided responses to the report. The Cyclical Program Review Committee (CPRC) reviewed and assessed the quality of the degree programs based on the four review documents and reports on significant strengths, opportunities for improvement and enhancement, and the implementation of recommendations.

The Implementation Plan identifies those recommendations selected for implementation, and specifies: proposed follow-up, who is responsible for leading the follow-up, and the specific timeline for addressing the recommendation, if applicable. Academic units, in consultation with the respective Dean(s), will submit an Implementation Report in response to the recommendations identified for follow-up. The Report is due January 31, 2018.

**SIGNIFICANT PROGRAM STRENGTHS**

* The degree programs have a strong commitment to interdisciplinary science, spanning multiple fields and disciplines, with contributions from diversified associate graduate faculty.
* ‘Student success rate of scholarships and publications in high-impact peer-reviewed journals is impressively high.’
* The ‘quality of graduate supervision is very high, and certainly one of the main reasons for the consistently high enrolment in the past decade.’
* Research equipment is housed in core facilities with appropriate access models which provides an ‘excellent approach to ensure efficiency and reduce duplication’.
* ‘ENLS faculty are highly qualified based on their research and scholarly record.’
* Graduates of these programs have marketable and transferable skills and are not having any difficulty finding jobs in their field of training.
* External reviewers commended the programs for appraising the post-graduation success of their students by tracking graduate employment, “This is an excellent initiative as it provides valuable information about the job readiness of graduates and can be used to assess the effectiveness of skill-development provided by the Program.”
* The Programs allow for opportunity to transfer from the MSc to the PhD level.

**OPPORTUNITIES FOR PROGRAM IMPROVEMENT AND ENHANCEMENT**

* The Programs should ensure that both core and elective courses are offered on a regular basis to allow students to meet their course requirements.
* Long time-to-completion of degrees may be attributed to the higher number of courses that students must take; 3 for MSc and 2 for PhD, compared to similar programs at other Ontario Universities (2.0 MSc; 0 PhD).
* Development of an internal seminar program for ENLS graduate students would promote communication training.
* Additional common space would promote collegiality, cross-foster scientific ideas to provide for a sense of community.

**COMPLETE LIST OF RECOMMENDATIONS**

* *Recommendations 1 to 5 were official recommendations from the External Reviewers.*
* *Recommendations 6 was proposed by the Dean of Graduate Studies.*

**RECOMMENDATION 1**

**That the number of required courses be reduced to 1.0 FCE for MSc students, and 1.0 FCE for PhD students who do not have an MSc (ie direct entry PhD students) or 0.5 FCE for students who have an MSc and have already completed 1.0 FCE graduate-level course**.

The ENLS course requirements exceed those of a number of similar degree programs at other institutions, and learning outcomes could be maintained with fewer required courses. Our proposed minimum requirements would not preclude students from taking additional courses as their academic background and proposed thesis research might require.

Program Response

The number of required courses could be reduced for both the MSc and PhD which bring them more in line with similar research-intensive graduate programs. Learning outcomes could be maintained with fewer mandatory courses. MSc requirements would be reduced from 3.0 to 1.0 course credits. PhD requirements would be reduced from 2.0 to 0.5 course credits. For both programs, the supervisory committee would determine if an additional 0.5 course credit would be required. Students who have passed the Conversion exam will be required to complete a minimum of .10 credits, and possibly an additional 0.5 course credits.

Revisions are to be approved in 2016-2017 and implemented by September 2017.

Decanal Response

The proposal was approved by Senate in 2017 and will take effect September 2017.

**RECOMMENDATION 2**

**That an internal seminar series be established as part of the degree requirements for both MSc and PhD graduate students.**

Seminar presentations are an excellent tool to promote communication training.

Program Response

Program is working on re-constituting the seminar series. An application for funding has been submitted to the School of Graduate Studies to defray the travel costs of external speakers. The series will ‘serve as a useful tool for student engagement. The seminar series will be made mandatory, as part of the MSc core courses during 2017-2018.

Decanal Response

A seminar series is important to give students the depth and breadth of knowledge required for a graduate degree. An application to the Strategic Research Fund for monies was submitted and partial funding was approved.

**RECOMMENDATION 3**

**That the process for assigning graduate teaching be formalized between undergraduate and graduate levels.**

Program Response

The Director plans to begin annual discussions about staffing plans earlier in the academic year. The reduction in course requirements and the new School of the Environment should smooth the graduate-undergraduate consultation on teaching assignments.

Decanal Response

Undergraduate programs provide the staffing resources for the graduate programs. A closer working relationship with the undergraduate Chairs/Directors will ensure that staffing plans are developed smoothly taking into account both graduate and undergraduate needs.

**RECOMMENDATION 4**

**That the program finds additional common space for graduate students and faculty to meet.**

Program Response

A space for exchanging ideas is a critical element of the post-graduate experience. The Director has initiated preliminary correspondence to identify a common and informal meeting place for graduate students and faculty. Proposal will be submitted to Dean of Graduate Students and Dean of Science in Fall 2016.

Decanal Response

In the next year, expansion of graduate space will be limited due to renovations taking place in the Bata Library. The program is encouraged to be creative in repurposing space for graduate students.

**RECOMMENDATION 5**

**That stipends for international students be augmented to provide additional financial assistance and reduce drop out levels.**

Program Response

The Program agreed that the withdrawal rate is higher than desirable. The Program believes that a recent change, the annual allocation of International Fee Waivers to programs with explicit limits is a step in improving this circumstance. The Program will continue to explore and discuss other remedial measures at the Graduate Studies Committee and among Program Directors.

Decanal Response

Previously, graduate studies have offered a 75% fee waiver for International students. In 2016-2017, the fee waiver for international students has been increase to 100%, equal to that of domestic students. This will improve the financial situation for international students.

**RECOMMENDATION 6**

**That the balance of part-time unfunded to full-time funded students be reviewed.**

**IMPLEMENTATION PLAN**

The applicable Dean, in consultation with the Department Chair/Director of the relevant Academic Unit shall be responsible for monitoring the Implementation Plan. The Reporting Date for submitting a follow-up Implementation Report is indicated below and is the responsibility of the Academic Unit in consultation with the Dean.

**DUE DATE FOR IMPLEMENTATION REPORT: JANUARY 31, 2018**

The Implementation Report should be submitted to the applicable Dean(s) who will then forward the Report to the Office of the Provost.

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| **Recommendation** | **Proposed Follow-Up***If no follow-up is recommended, please clearly indicate ‘No follow up report is required’ and provide rationale.**Indicate specific timeline for completion or addressing recommendation if different than Due Date for Implementation Report* | **Position Responsible for Leading Follow-up** |
| Recommendation 1That the number of required courses for both the MSc and PhD programs be reduced, bringing them more in line with similar programs at other Ontario Universities. | No follow up report is required. Completed. Approved by Senate. To be implemented September 2017. |   |
| Recommendation 2That an internal seminar series be established for graduate students. | The seminar series will be partially funded and will be implemented for 2017-2018. Update to be provided. | Graduate Director  |
| Recommendation 3That the process for assigning graduate teaching be formalized between undergraduate and graduate levels. | Update to be provided. | Graduate Director in consultation with undergraduate chairs, Graduate Dean and Science Dean |
| Recommendation 4 That the program finds additional common space for graduate students and faculty to meet. | Report on required space to accommodate students in the programs. | Graduate Director in consultation with Dean - Graduate |
| Recommendation 5 That stipends for international students be augmented to provide additional financial assistance and reduce drop out levels.  | No follow up required. Completed. 100% fee waiver was implemented in 2016-2017. |  |
| Recommendation 6That the balance of part-time unfunded to full-time funded students be reviewed. | Update to be provided. | Graduate Director |