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***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**

**BIOLOGY**

*(March 15, 2017)*

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| **DEGREE PROGRAMS BEING REVIEWED** | **BSc Biology** |
| **EXTERNAL REVIEWERS** | **Dr. Robert Bailey, University of Ontario Institute of Technology**  **Dr. Laurene Ratcliffe, Queen’s University** |
| **INTERNAL REPRESENTATIVE** | **Dr. James Parker, Psychology, Trent University** |
| **YEAR OF REVIEW** | **2015-2016** |
| **DATE OF SITE VISIT** | **February 11-12, 2016** |
| **DUE DATE FOR IMPLEMENTATION REPORT BY BIOL** | **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 Bachelor of Science in Biology is delivered as either a 4-year Honours or 3-year General degree. During their degree, students may complete a Specialization in Conservation Biology or Health Sciences. These specializations build on existing strengths within the department and provide a unique learning environment for students.

External Reviewers commented that, ‘Biology is one of the foundational programs at Trent with a strong identity in the Canadian university community. It has maintained and grown its strength over the years by keeping experiential learning from first to fourth year.’

**SUMMARY OF PROCESS**

During the 2015-2016 academic year, the BSc Biology underwent a review. Two arm’s-length external reviewers (Dr. Robert Bailey, University of Ontario Institute of Technology and Dr. Laurene Ratcliffe, Queen’s University) and one internal member (Dr. James Parker, Trent University) were invited to review the self-study documentation and then conducted a site visit to the university on February 11PthP and 12PthP, 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 undergraduate degree program. The report considers four evaluation documents: the UProgram’s Self-StudyU, the UExternal Reviewers’ ReportU, the UProgram ResponseU, and the UDecanal ResponseU.

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: Curriculum Vitae; Course Syllabi; Learning Outcomes; Enrolment, Retention and Student Data; University Calendar Copy; University Degree Requirements; TUFA Collective Agreement; Administrative Structure; and Student Surveys. 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.

Once the external reviewers’ report was received both the 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 program 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 Biology degree provides students with a variety of experiential learning opportunities in class. There are multiple opportunities for field trips and other experiential learning opportunities via internships and placements are very positive aspects.
* The Biology department has a strong emphasis on Northern research.
* The program benefits from collaborations with other units.

**OPPORTUNITIES FOR PROGRAM IMPROVEMENT AND ENHANCEMENT**

* There are opportunities to increase career preparedness skills.
* Rapid enrolment growth in this program will be a challenge to manage within the current resource allocation. Pressure from increasing enrolments poses resource and equipment challenges for maintaining high-quality labs.
* The Program will need to manage the growing size of fourth year classes in order to ‘manage this critical stage of learning in the program’. There may be a need for smaller enrolment in upper year courses. Larger number of students makes it more feasible to offer more courses, as there will be robust enrolment in a diversity of upper year courses.
* Methods of assessment are typical; program should consider diversifying methods of assessment to assess student achievement of learning outcomes and degree level expectations. The Program should explore innovative pedagogy to incorporate into courses.
* The Program should track its graduates and their employment status.

**COMPLETE LIST OF RECOMMENDATIONS**

U**RECOMMENDATION 1**

1. **That a 3**P**rd**P **year level course in study design and data analysis be added to complement the 2**P**nd**P **year course Methods of Biological Inquiry; and;**
2. **That program curriculum be enhanced by increasing links to Indigenous education and scholarship strengths at the university.**

UProgram Response

Many Biology degrees across the province do not require a 3PrdP year study design and data analysis course. The Departmental Curriculum Committee will explore whether:

1. A 3PrdP year study design and data analysis course might be useful or whether the 4PthP year Research Design and Data Analysis course be modified. A 2PndP year biostatistics course should be required, such as the existing BIOL-ERSC-GEOG 2080H. The research design and data analysis components could be blended with existing 3PrdP and 4PthP year course curriculum
2. The Program has linkages with Indigenous education courses through its Internships/placements, however the Curriculum Committee will explore further opportunities for synergies.

UDecanal Response

1. The Program should explore if students would benefit from a research design and/or data analysis course at the third year level in order to be prepared for 4PthP year cap stone courses. The program should review the fit of the existing second year stats course, consult with cognate disciplines on possible modifications, and consider revising to serve multiple science disciplines.
2. The program should consider potential linkages with the BSc Indigenous Environmental degree, specifically in the areas of ecology, botany and zoology.

U**RECOMMENDATION 2**

1. **That innovative pedagogical approaches (eg flipped classroom) be explored to enhance student experiences and learning in larger face-to-face and distance classes.**
2. **That hard enrolment caps be established on section sizes.**

UProgram Response

1. Instructors do explore a variety of pedagogical techniques in courses, ie flipped classroom, cell phone technologies. The Centre for Teaching and Learning will be invited to an upcoming departmental meeting to showcase innovative pedagogical techniques in education.
2. Many of the program’s courses already have caps. University guidelines prevent the program from capping required courses. Caps are placed on seminar and labs. The Curriculum Committee will explore whether pedagogically certain courses should be capped. Decreasing caps would require additional resourcing of the department.

UDecanal Response

1. The Department should investigate and familiarize itself with the suitability of new technologies and strategies for enhancing teaching in Biology. Faculty should be encouraged to attend the Centre of Teaching & Learning seminars.
2. It is essential that required courses are open with no limits. The potential impact of enrolment limits needs to be reviewed in consultation with cognate disciplines.

U**RECOMMENDATION 3**

1. **That each course be assigned a TUFA coordinator who will be responsible for its delivery in order to maintain and increase the overall quality of the program.**
2. **That course instructors be assigned a minimum of three months before the start of course.**
3. **That sessional course instructors have access to required teaching materials and office space.**

UProgram Response

1. In team taught courses, a TUFA member typically acts as coordinator for the course and has responsibility for handling issues such as plagiarism. This is an informal arrangement and the Curriculum Committee will consider this issue and make a recommendation regarding formalizing this policy.
2. Approval of the budget and the finalization of teaching resources are determining factors beyond the control of the department. Once the staffing plan is approved, the department hires instructors as quickly as possible.
3. CUPE instructors are provided with shared office space. The department will make sure that sessional instructors have access to required teaching material.

UDecanal Response

1. A course coordinator should be clearly identified for each team taught course. It is essential that one person be responsible for overall management and administration.

b) & c) Moving up the budget process earlier will aid in assigning course instructors in a timelier manner and will ensure that CUPE instructors receive required course materials earlier.

U**RECOMMENDATION 4**

1. **That a representative and ongoing student voice be established to communicate concerns directly to the Chair with a presence at departmental meetings and on search committees.**
2. **That a Chair’s Council of program and sub-discipline representatives, and representatives from the ENLS Graduate program be established and meet regularly.**
3. **That a retreat continue to be held annually.**

UProgram Response

1. A few years ago, it was the norm to include undergraduate representatives selected by the Biology Undergraduate Society and at times a graduate student representative. The department review and develop a policy regarding student representation at departmental meetings. Students could also sit on the Curriculum Committee. Undergraduate and graduate students are included on all tenure-track searches.
2. The department will explore whether formalized regular meetings with specified individuals (coordinators of Biomedical, Kinesiology, and representative on the ENLS graduate program) would enhance the running the Biology Degree.
3. The department will continue to hold an annual retreat at the end of August or early September.

UDecanal Response

1. The Department should develop a strategy to ensure student representation on relevant committees.
2. The Department should consider establishing a departmental executive committee, to act as advisory to the Chair and reduce administrative load of the Chair.

U**RECOMMENDATION 5**

**That given the degree name ‘Biology’ be reviewed, particularly given the diversity of paths available.**

UProgram Response

The Department will explore whether a change in the degree name for students in different streams is advisable. This matter will be discussed at a future departmental meeting. Alternate ways to brand the department will also be reviewed.

UDecanal Response

The Department may consider renaming the department however should not alter the names of current degrees.

**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 ‘*U*No follow up report is required*U*’ 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** |
| URecommendation 1   1. That a 3PrdP year level course in study design and data analysis be added to complement the 2PndP year course Methods of Biological Inquiry 2. That program curriculum be enhanced by increasing links to Indigenous education and scholarship strengths at the university. | Program to report on curriculum revisions, a) and b). | Chair |
| URecommendation 2   1. That innovated innovative pedagogical approaches (eg flipped classroom) be explored to enhance student experiences and learning in larger face-to-face and distance classes. 2. That hard enrolment caps be established on section sizes. | Program to report on both a) and b). | Chair |
| URecommendation 3   1. That each course be assigned a TUFA coordinator who will be responsible for its delivery in order to maintain and increase the overall quality of the program. 2. That course instructors be assigned a minimum of three months before the start of course. 3. That sessional course instructors have access to required teaching materials and office space. | 1. Program to provide update on formalizing this process. 2. No follow-up required. This is beyond the control of the department and is dependent upon final approval of the budget. 3. No follow-up required. Program indicates it will ensure that course instructors have access as soon as possible. | Chair |
| URecommendation 4   1. That a representative and ongoing student voice be established to communicate concerns directly to the Chair with a presence at departmental meetings and on search committees. 2. That a Chair’s Council of program and sub-discipline representatives, and representatives from the ENLS Graduate program be established and meet regularly. 3. That a retreat continue to be held annually. | 1. Program to provide update on student participation. 2. Program to provide update on establishment of departmental executive committee. 3. No follow-up is required. Program indicates that retreat will continue to take place. | Chair  Chair with Graduate Director |
| U**Recommendation 5**  That given the degree name ‘Biology’ be reviewed, particularly given the diversity of paths available. | Program to provide update from departmental discussions. | Chair |