

SELF-STUDY TEMPLATE CYCLICAL REVIEW OF EXISTING PROGRAMS FOR UNDERGRADUATE/GRADUATE DEGREE PROGRAMS

(February 10, 2015)

The following template must be used for cyclical program reviews and should be completed by the academic unit(s) responsible for the program(s) being reviewed. All units involved in the offering of the degree program(s) under review should be involved in the process of writing the self-study as each will be required to sign off on the self-study (see Approval Signatures section below).

The Self-Study should be broad-based, reflective, and forward-looking; and should include critical analysis. Please be reminded that it is the degree program (not the academic unit) that is being evaluated.

For the full process of Cyclical Reviews please see the Institutional Quality Assurance Policy (IQAP). The academic unit(s) are responsible for completing the self-study. Once completed the self-study and the completed appendices should be submitted to the appropriate Dean for approval. The Dean will review the document, may request revisions, and once satisfied will forward all documentation to the Program Quality Assurance Committee (PQAC). PQAC will approve the documentation and the documents will then be sent to the external reviewers in preparation for the site visit.

If you have any questions please contact the applicable Dean or the Office of the Provost (T. Flaherty).

NAME OF DEGREE PROGRAM(S) UNDER REVIEW

List all Degree Program(s) being reviewed and discussed in this self-study	Ecological Restoration B.Sc.
Date of Last Cyclical Review	N.A.

APPROVAL SIGNATURES

This section will include all Names and Signatures of: Chairs and/or Directors who are involved in managing the degree program(s) being reviewed; and applicable Dean(s). For example – if Environmental Chemistry is being reviewed both the Chair of ERS and CHEM will sign off on the self-study. Please add additional rows if required.

List Name(s) of Degree Program Chair(s) and/or Director	Signature (electronic please)	Date
Dr. Stephen Bocking		

Dean(s)	Signature (electronic please)	Date
Dr. Holger Hintelmann		

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PART A – INTRODUCTION AND OVERVIEW

a) Provide an introduction of the program which provides a brief history and background of the degree programs being reviewed, including how long they have been in existence. Emphasis should be placed on the period of time since the last cyclical review.

Ecological restoration is the practice of restoring ecosystems as performed by practitioners at specific project sites. **Restoration ecology** is the science upon which the practice is based. The degree/diploma program in Ecological Restoration covers both. Students graduate at the end of four years with a 2-yr Technicians Diploma and 4-yr Honour's B.Sc in Ecological Restoration. Students must complete all four years to receive both credentials. The first year of student intake was 2008, with the first graduation in 2012. The academic program structure is essentially as was proposed initially, although some adjustments to courses were undertaken in order to improve the efficiency of educational delivery, in response particularly to the university's shift across all academic departments from double-term to single-term courses and to meet the requirements of the Environmental Careers Organization Canada's expectations for accreditation.

b) Include a brief description of the academic unit(s) responsible for the degree programs being reviewed, and, where more than one unit is responsible for a degree program; describe how the units work together in collaboration. Describe the academic unit's governance structure and its administrative support.

The first two years occur at Fleming College's School of Environmental and Natural Resource Sciences (SENRS), Lindsay and the second two year at Trent University's Environmental and Resource Studies/Science (ERS) Program, Peterborough. The College and the University each provide a Co-Coordinator for the dual credential program. SENRS supports 31 programs, including certificates, diplomas and graduate certificates and a full-time student population of approximately 1700. The ERS Program supports alone and collaboratively nine undergraduate degrees, services major/elective student enrolment in approximately 2000 full-time student course-equivalents and collaborates in delivery of its degrees with some 25 academic units at the university, Biology, Geography, Indigenous Studies, Canadian Studies, Anthropology, International Development Studies, and Chemistry being particularly involved. The Ecological Restoration B.Sc. is guided by an Advisory Committee comprised of professional practitioners of ecological restoration in government, and non-governmental organizations, as well as students in the degree program and faculty from both parent institutions. Administrative support is provided by both institutions integrated with support for other academic offerings through the academic units, decanal offices, post-secondary liaison personnel and the registrar's offices.

c) Describe any distinguishing features of the program.

A program curriculum and associated teaching and learning strategies that respond to the growing shortage of skilled workers in the environment sector, as well as employer concerns regarding worker preparedness, skill mix and experience;

The development of an innovative, integrated program model that infuses diploma and degree level outcomes across the four years of study;

The design of an interdisciplinary, science-based curriculum in ecological restoration for which there

are few existing models and that ensures students truly understand the connections between, relevance of, and 'fit' of courses in the program of study;

Integrating applied research across the undergraduate curriculum from first semester onwards and promotion of new approaches to inter-institutional research activity that will encourage faculty collaboration, engage external partners and provide students with a unique educational experience across the curriculum;

The design and evaluation of student success strategies, effective support systems, student pathways and inter-institutional collaboration;

The integration of the elements that distinguish the academic culture of each institution *throughout the program of study*, thereby reducing the challenges for students in transition from Fleming to Trent;

The integration of applied learning and field experiences of increasing challenge and complexity across the curriculum;

An accelerated, but not unreasonable timeframe for diploma / degree completion, without compromise of academic rigour or content;

New approaches to integrated staffing and collaboration in order to realise the above.

d) Provide concerns and recommendations raised in the most recent cyclical program review and describe action(s) taken if relevant.

N.A.

e) Comment on influences and developments that have impacted the program since the occurrence of the most recent cyclical program review.

N.A.

f) Provide a brief description of the process by which the self-study was prepared including faculty and student input and involvement.

The Ecological Restoration B.Sc. Advisory Committee meets annually to review the achievements, progress and concerns about the program. The Committee is comprised of professional practitioners of ecological restoration in government, and non-governmental organizations, as well as students in the degree program and faculty from both parent institutions. The Committee meetings involve the review of statistical

documentation, recommendation of alteration of the curriculum and discussions related to student consultation. This self-study thus builds on the ongoing annual reviews. A Committee was created for the self-study in order to summarize the experience of the B.Sc. according to the self-study template. The Committee consisted of 3 ERS faculty, 1 Fleming faculty, 1 Fleming administrator, and one current Ecological Restoration B.Sc. student. In addition, Ecological Restoration students were among those surveyed electronically concerning their satisfaction with their education.

PART B – EVALUATION CRITERIA

Note: This part of the self-study will require the completion/development of Appendix C-Learning Outcomes; and, Appendix D-Enrolment, Retention, and Student Data.

Appendix C – Learning Outcomes: *Early in the review process programs should consult with the Centre for Teaching and Learning for assistance with developing Learning Outcomes.*

This process will involve developing program goals, mapping of program goals and courses to degree level expectations and methods of assessment and evaluation.

Appendix D – Enrolment, Retention, and Student Data:

For Undergraduate Data: *The Office of Institutional Planning & Analysis will provide data on student numbers for undergraduate programs. Data will be supplied to the Dean, who will then share data with the academic unit responsible for writing the Self-Study. Where possible, data will span a period of up to 5 years. The Self-Study should include a summary and analysis of the data.*

For Graduate Data: Graduate Programs should consult with the Office of Graduate Studies.

1. OBJECTIVES

a) Describe how the degree program is consistent with the institution's mission and academic plans.

The University's mission focuses on providing students with distinctive education that is enhanced by experiential and interdisciplinary experience, which involves partnerships with other institutions and which leads in Indigenous education. This B.Sc. is the unique Canadian undergraduate degree on ecological restoration. It is indeed interdisciplinary and partnered, requiring courses that are cross-listed with 6 university academic departments and co-delivered with Fleming College. Experiential and Indigenous-themed courses are required and are also offered as electives.

b) Describe the degree program requirements and indicate appropriateness of learning outcomes and how they align with the institution's statement of the undergraduate and/or graduate degree level expectations.

The degree's alignment with Trent's undergraduate degree level expectations is outlined below. In addition the degree also aligns well with college diploma-level program learning outcomes, vocational outcomes and essential employability skills, not stated here.

Depth and Breadth of Knowledge

Students learn to analyse the theoretical foundations of ecological restoration, the scope of the discipline, the

relationship between theory and application and issues in contemporary practice (ethics, the concepts of ecological integrity and resiliency, ecosystem health and sustainability).

Students are taught how to effectively integrate knowledge from a range of disciplines (ecology, aquatic biology, hydrology, engineering, planning, communications, social science) in developing their professional practice in ecological restoration.

Knowledge of Methodologies

Students learn how to develop on-site environmental sampling, testing, research and monitoring programs to inform understanding of a site's key ecological features and ecosystem health.

They are taught how to analyse and interpret relevant site data and use that information to develop the rationale and strategies for the restoration project.

Included in the methodological education is the analysis of social, cultural, economic, legal and political context for a given project, including the positions of key stakeholders and their respective needs, wants, and desires.

Application of Knowledge

The curriculum covers the design of a restoration project with clear, achievable and measurable goals and intended outcomes; accounting for ongoing causes of degradation, anticipating future changes, and sustainability and use.

Students learn how to develop plans and programs that comply with environmental / planning and other regulatory requirements and standards.

Included in the education is understanding of the principles of environmental restoration economics in planning and resourcing project scope, monitoring and maintenance.

Training includes the design and implementation of an applied research project through all stages of development (selection / design of scientific methodology and techniques; data collection, analysis and interpretation; publication / dissemination of results).

Communication Skills

Students learn how to promote the concept of land stewardship and develop strategies to build and sustain it in a given project.

Advanced training is provided on how to communicate effectively and persuasively in oral and written forms to diverse audiences using a range of techniques (reporting, presentation, liaison, dispute resolution, public education and advocacy).

Awareness of Limits of Knowledge

Students learn to think critically and creatively in problem solving and selecting appropriate restoration strategies and methods.

Training is provided on the evaluation of projects including scope, protocols, interventions, and natural products and services and in relation to funding, organizational supports and stakeholder needs.

Autonomy and Professional Capacity

Graduates of the degree will know how to plan and manage projects including securing authorisations, engagement of stakeholders, training in and assessment of field techniques, and timelines.

Training on the management of projects will include foci on long term sustainability; monitoring and adapting

where changes are necessary.

Students learn how to work both independently and co-operatively in multidisciplinary teams and with stakeholders in order to achieve adaptively the desired results.

2. ADMISSION REQUIREMENTS

a) Describe how admission requirements are appropriately aligned with the learning outcomes established for completion of the degree program (refer to admission regulations as appropriate).

The admission requirements for the Ecological Restoration B.Sc. are complicated by the fact that application occurs only through the College application process. Thus, students may access the degree with college admission credentials. This explains partially the consistent diversion of many students into other college diploma options after the first semester, where students do not achieve the requisite 65 in two capstone courses (Environmental Science, Critical Reading and Writing).

The degree requires an OSSD with the majority of credits at the College (C) and Open (O) level, including two English credits in the College (C) stream, two Math credits in the College (C) or University/College (UC) stream, and a grade 11 or 12 science credit in the College (C) or University/College (UC) stream. Recommended are C, U/C, U/M level courses in Chemistry, English and Biology.

b) Explain, if any, alternative requirements for admission to the program. If appropriate, include an explanation as to how the program recognizes prior learning.

The Admissions Committee reviews applications case-by-case and will consider additional evidence of preparedness based on personal history.

3. CURRICULUM

a) Provide an overview of the program's basic structure, including details of streaming, major, joint-major, and minor options.

The 1st and 2nd years of the program address basic and intermediate-level competencies. This covers the principles of environmental and restoration interdisciplinary science, math (statistics), Indigenous perspectives, chemistry, ecological theory and science, GIS, environmental literature, university-level writing, vegetational analysis, and both landscape and site-scale aquatic and terrestrial field skills.

The 3rd and 4th years of the program emphasize intermediate and advanced-level competencies. In addition to the

extension of some of the 1st and 2nd year competencies, the curriculum covers ethics, environmental politics, restoration project planning and management, site and landscape scale restoration thinking, experiential field research design, oral and written communication, and the opportunity to study relevant electives in specialty subjects and applications.

Approximately 75% of the courses in the Ecological Restoration B.Sc. are required, plus some of the electives must be selected from the advanced options in the ERS Program. Given this prescribed nature of the joint diploma-degree, links with other degrees would be difficult. However, a few students have inquired about adding a “specialization” or “minor” to their degrees in the areas of Sustainable Agriculture, Indigenous Environmental Studies or Northern Studies. Any actual attempts have not been tracked.

b) Explain how the program structure and regulations are appropriate to meet the program learning outcomes and degree level expectations.

The program structure fits well into the university’s program learning outcomes and degree level expectations.

Curriculum map – Core Courses for Ecological Restoration B.Sc.

Required Courses	UDLEs					
	1 Depth and Breadth of Knowledge	2 Knowledge of Methodologies	3 Application of Knowledge	4 Communication Skills	5 Awareness of Limits of Knowledge	6 Autonomy & Professional Capacity
Level 1000 courses						
ERSC 1010H Foundations of environmental science and studies	B	B		B	B	
ERSC 1020H Cases in environmental science and studies	B	B		B	B	
CHEM 1000H Introductory chemistry 1	B	B		B	B	
CHEM 1010H Introductory chemistry 11	B	B		B	B	
MATH 1051H Non-calculus statistics 1	B	B			B	
MATH 1052H Non-calculus statistics 11	B	B			B	
ENGL 1000-level H (overlaps ENGL-ERST 2705H Literature and the environment)	B			B	B	
SCI 1000-level Y	B	B		B	B	
Level 2000 courses						
ERST-INDG 2601Y Introduction to Indigenous environmental studies	B	B		B	B	
ERSC 2230H Environmental assessment : sampling & analysis	I	I	B	I	I	B

ERSC 2240H Ecological assessment for natural resource management	I	B	I	B	B	B
ERSC-GEOG 2090H Introduction to geographical information systems	I	I	I	I	I	B
ERST 2100H Environmental science and politics	B	B	I	B	I	B
1.5 SCI 2000-level (overlaps with ERSC-BIOL 2260H Introductory ecology)	B	I	I	B	B	B
Level 3000 courses						
GEOG 3530H Hydrology	B	I	B		B	B
BIOL 3190H Wild plants of Ontario	I	I	I	I	I	B
ERST-PHIL 3300Y Environmental ethics or ERSC/T 3310Y Environment & ecological risk assessment	B/I	B/B	B/I	I/I	I/I	B/I
ERSC 3501H Environment & communication: oral & visual presentation or ERSC 3502H Environment & communication: writing & reporting	A/A	B/B	I/I	A/A	I/I	I/I
ERST-CAST 3780H Canadian renewable resource economics & project planning	I	I	I	I	I	A
Level 4000 courses						
ERSC 4520H Restoration ecology	A	I	A	I	I	A
ERSC 4530H Remediation & reclamation of sites	A	I	A	I	I	A
SCI 3000-level or 4000-level H field course (selected from ERSC 3840H, 4801H, 4802H, 4840H or external)	I-A	I-A	I-A	I-A	I-A	I-A
6 additional credits: 2.5 ERSC/ERST 1.0 at 4000-level, 3.5 electives 2.0 at 3000-level at least. (3.5 must be SCI)	B-A	B-A	B-A	B-A	B-A	B-A

c) Describe/explain how the curriculum for the degree program reflects the current state of the discipline or area of study.

The Ecological Restoration B.Sc. meets the growing need for specialists in the field. Its curriculum is informed by the academic and applied journals, conferences and educational initiatives of the international Society for Ecological Restoration. It is consistent with the guidance of ECO Canada. The degree is served well by an Advisory Committee of academic, industry and government service experts in the field.

The change in the federal environmental legislation this past year clearly creates a climate of resource development in Canada across all sectors (mines, gas/oil, aggregate), but there is also increased attention being paid to post-development remediation and reclamation. As such, there is significant demand for graduates that have some hands-on experience as well as a strong understanding of the discipline of ecological restoration. In addition, many of the new development projects are occurring on lands that are under current treaty negotiations with First Nations Communities or are happening in direct partnerships with First Nations. Thus there is also a need for practitioners to have a working knowledge of the important cultural practices and accommodations that need to be undertaken,

which aligns quite nicely with our current curriculum and partnerships with the Indigenous Environmental Studies Program at our partner institution.

In addition to this new development, there continues to be a need at a more regional and local level to deal with legacy sites related to invasive species, eutrophication, resource extraction, intensive silvicultural, and industrial agriculture. These projects require individuals with a range of quantitative and qualitative skill sets at both the organismal, chemical, and ecosystem level.

Faculty at both institutions are have active research programs related to mine site restoration, air pollution monitoring and effects, invasive species management, climate change impacts, lake management, and conservation biology. They are routinely attending applied and professional meetings at the regional, national, and international level and incorporating their own experiences and that of their research colleagues into their course curriculum. This approach is vital for ensuring that our students are receiving living curriculum and can be provided with practical case studies of which faculty are intimately familiar. Through these faculty networks our students have been involved with research projects ranging from the impacts of the tar sands in northern Alberta to Socio-cultural restoration in South Africa. They have been involved with partnerships with local lake associations (Kawartha Lakes Stewards Association, Haliburton Coalition of Lake Associations), Conservation Authorities (Kawartha Conservation, Toronto Region Conservation, Otonabee Region Conservation), First Nation Communities (Curve Lake, Alderville, Hiawatha, Six Nations), provincial and federal government agencies (Ministry of the Environment, Ministry of Natural Resources and Forestry, Environment Canada), and a number of private sector companies.

The degree/diploma credential that the Ecological Restoration Program students are receiving is seen as quite valuable by potential employers, including positions in the private sector and government agencies. Employers and graduate supervisors routinely comment about the strength of the students in the field setting. They are very familiar with the different methodological approaches to sampling and characterizing terrestrial and aquatic communities as well as being prepared for the rigors of field work. Employers also routinely emphasize the need for graduates to be able to work effectively in a group setting, to be effective communicators, and to be effective problem solvers. These skills are addressed directly in a number of the courses, but are also woven into the fabric of the entire curriculum.

A comparatively (internal Trent comparator) large proportion of the students are choosing to pursue additional studies at the Masters and Ph.D. level.

d) Provide evidence of any significant innovation or creativity in the content and/or delivery of the program relative to other such programs.

No other undergraduate degree in Ecological Restoration exist for comparison.

e) Describe the mode(s) of delivery and how they meet the program's identified learning outcomes are appropriate and effective.

The degree structure and requirements are presented below. The relationships between the program learning outcomes and specific courses are specified in section 3.

Program name: Ecological Restoration Honours B.Sc.

	Course Code	Course Name
Semester 1	COMM131	Critical Thinking and Communication
	ECOS13	Ecosystem Skills
	GEOM36	Geospatial Techniques
	MATH63	Applied Mathematics in Natural Resource Sciences
	SCIE 118	Environmental Science I
	SCIE 135	Applied Chemistry in Ecological Restoration
	Course Code	Course Name
Semester 2	SCIE 119	Environmental Science II
	ECOS 27	Introduction to Ecology
	GEOM 21	GIS Principles
	COMM 137	Readings in Environment and Restoration
	SCIE 120	Introductory Chemistry I
	FSTY 50	Trees and Shrubs of Ontario
	Course Code	Course Name
Semester 3	SCIE 121	Introductory Chemistry II
	GEOL 21	Principles of Hydrogeology
	MATH 86	Math I
	APST 83	Restoration Ecology Field Camp
	FSTY 75	Introduction to Plant Community Systematics
	ECOS 31	Introduction to Indigenous Environmental Studies: History and Culture
	Course Code	Course Name
Semester 4	ECOS 7	Ecosystem Monitoring and Assessment
	SCIE 136	Methods in Environmental Science
	MATH 87	Math II
	ECOS 30	Introduction to Indigenous Environmental Studies: Culture and the Environment
	GEOM 41	Remote Sensing III
	SURV 18	Geomatics in Surveying
	Course Code	Course Name
8 @ Tre	ERST-POST 2100 H	Environmental Science and Politics

	ERST-CAST 3780H	Canadian Renewable Resource Economics and Project Planning
	ERST-PHIL 3300Y	Environmental Ethics
	ERSC/ERST 3501H or 3502H	Environmental and communication: Oral and Visual Presentation or Environmental and Communication: Writing and Reporting
	ERSC 4502H	Restoration Ecology
	ERSC 4530H	Remediation of Degraded Sites
	Approved Field Course	
	Remaining credits student choice	

4. TEACHING AND ASSESSMENT

a) Describe the methods for assessing student achievement of the defined learning outcomes and indicate how the degree learning expectations are appropriate and effective.

The methods of assessment for the Ecological Restoration B.Sc. are as described in the text for the ERS B.Sc. In addition, there is an emphasis on field work. In the first two years field trips are frequent, assessed by participation in the field exercises and the production of field reports. An intensive two week long field camp is also required, with the same assessment methods. In the 3rd or 4th year students are required to take a field course. This can be a Trent course, one from the Ontario University Program in Field Biology or a program such as Operation Wallacea, with university credit assignments added and graded by Trent faculty under ERSC 3905Y or 3906H.

b) Describe/explain the appropriateness and effectiveness of the means of assessment, especially in the students' final year of the program, in clearly demonstrating achievement of the program learning objectives and the institution's (or the program's own) statement of Degree Level Expectations.

See the text for the other ERS degrees.

5. RESOURCES

Please note that the purpose of this section is to assess not request additional resources. Reviewers will recognize the institution's autonomy to determine priorities for funding, space, and faculty allocation.

a) Assess the appropriateness and the effectiveness of the academic unit's use of existing human, physical and financial resources in delivering its program(s). This may include details on sharing of resources, cross-listed courses, or faculty support from other departments/programs, as well as priorities for funding, space,

and faculty allocation.

See the text for the other ERS degrees.

Both Fleming and Trent have invested in recruitment measures, including ads in national newspapers and the journal AJ, preparation of program-specific brochures, and the creation of attractive webpages, including video testimonials from graduates of the program. <http://flemingcollege.ca/programs/ecological-restoration>. <http://trentu.ca/ecologicalrestoration>.

The major difference between the Ecological Restoration B.Sc. and other ERS degrees is the provision of experiential field experience. This is done in each year of the program, but particularly in the first two when the opportunity exists for taking the whole cohort of students into the field on numerous occasions and the College budget supports it. This is not possible once the students get to Trent where they mix in classes with students from other degrees.

Another innovation is in the delivery of math and chemistry in which the examples that are presented relate directly to ecological restoration.

A number of the 3rd and 4th year courses that predate the Ecological Restoration diploma and degree have been altered by instructors to meet the needs of the program. Examples include: the courses on Environmental Ethics, Canadian Renewable Resource Economics and Project Planning, Greening the Campus: Restoring and Sustaining Green Infrastructure and Environmental Science and Politics.

b) Participation of a sufficient number and quality of faculty who are competent in the teaching and/or supervision in the program.

See the text for the other ERS degrees regarding years 3 and 4.

Regarding years 1 and 2, an excellent team of instructors has been assembled from multiple programs and disciplines to deliver our curriculum and continue to receive excellent feedback from students. The Coordinator of the Fleming Program is Dr. Eric Sager, who is also an Adjunct Professor at Trent University, involving supervision of graduate students and participation in various Trent academic projects. Since many of the same courses are being offered at the university, some of those same individuals to offer their course at Fleming (i.e. James Wilkes (Indigenous Environmental Studies who is also teaching in the Indigenous Environmental Studies Program at Trent), Dr. Mark Dzurko (a SENRS faculty teaching chemistry), Dr. David Woodfine (Summer Field Camp), Dr. Peter Lapp (SENRS faculty who teaches the 1st year Critical Reading and Writing and Readings in Environment and Restoration and also delivers the Environmental Communication: Writing and Reporting at Trent), Dr. Gord Balch (Senior Scientist in the CAWT and co-instructor of our Methods in Environmental Science course), and Dr. Lisa Kraemer (who teaches our Introduction to Math courses and the Ecology course and has a long history of teaching in the Environmental and Resource Studies Program at Trent). As well, the program has taken advantage of the excellent curriculum already being delivered by Brian Gerry, Karen Whillans-Browning, and Barb Elliot in their home programs, as well as some of the curriculum of the common 1st and 2nd Semester courses at SENRS. The program has also been supported well with the efforts of technical staff – specifically Mark Newell and Scott Miles.

c) Provide evidence of adequate resources to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities, as appropriate, including details of library and information technology support, and laboratory access.

See the text for other ERS degrees.

6. QUALITY INDICATORS

Evidence should be provided to demonstrate that the program structure and faculty research ensures the intellectual quality of the student experience.

a) Faculty

Comment on the following: qualifications of faculty (i.e., appropriateness of expertise to contribute substantively to the program); research and scholarly record; class sizes; teaching loads; percentage of classes taught by TUFA/LTAs/CUPE faculty; numbers, assignments and qualifications of non-permanent faculty LTAs/CUPE.

See the text for the other ERS degrees.

b) Students

Comment on the following: applications and registrations; attrition rates; time-to-completion; final-year academic achievement; graduation rates; academic awards; student in-course reports and teaching.

See the text for the other ERS degrees.

To progress to Semester 2, students must achieve a 65% grade in the courses Environmental Science 1 and Critical Thinking and Communication. As mentioned regarding admissions, there is consistently a high rate of attrition of students from the degree in their first year – around 50%. Almost all of those students switch into another diploma program at Fleming College. In addition to the lack of university-level competency in math and chemistry, which cannot be filtered through the College application process, students also identify the fact that they don't want to invest 4 years of their time to earn an academic credential.

In order to progress to year 3 of the program, students must pass (50%) all courses and achieve a 70% overall program average in Years 1 and 2. Graduation rates for students who enter year 3 are consistently almost 100%. The grades in 3rd and 4th years are comparable to students in the same courses from other degrees and are noticeably higher in those courses that require field work. A high proportion of the graduates proceed to graduate school. We do not track all of these, but of those that have been followed all have been successful in those degrees.

The students created and operate an active Student Chapter of the professional Society for Ecological Restoration. The Chapter organizes and links with educational opportunities and restoration field activities within and beyond the university and college.

Three internal awards have been created to recognize the academic achievements of students in the joint degree, two offered by Fleming and one by Trent.

Respondents to the electronic surveys included nine students in the Ecological Restoration program. All would recommend the diploma/degree program to others and all would choose again to study in the program. Quality of instruction was rated high in all categories. A very/extremely important quality indicator

for students was opportunity for experiential education. Two-thirds of the respondents felt that the program offerings were sufficient.

c) Graduates

Comment on the following: rates of graduation; employment six months and two years after graduation; post graduate study; 'skills match' and alumni reports on program quality when available and when permitted by the Freedom of Information and Protection of Privacy Act (FIPPA).

See the text for the other ERS degrees.

7. QUALITY ENHANCEMENT

a) Comment on and describe any initiatives or revisions taken to enhance or improve the quality of the program and the associated learning and teaching environment.

This is the first Quality Assurance review of the Ecological Restoration B.Sc.

8. FOR GRADUATE PROGRAMS ONLY

a) Monitoring and management of students' time-to-completion, cohort data, and retention rates in relation to the program's defined length and program requirements.

b) Suitability of the major research requirements for degree completion in research-focussed graduate programs.

c) Quality and availability of graduate supervision

d) Definition and application of indicators that provide evidence of faculty, student and program quality, for example:
i) Faculty – Comment on research funding, honours and awards, and evidence of commitment to student mentoring.
ii) Students – Comment on grade-level for admission; scholarly output, success rates in provincial and national scholarship competitions, awards and commitment to professional and transferable skills; and where appropriate to the program, evidence that financial assistance for students is sufficient to ensure adequate quality and number of students.
iii) Program – Provide evidence of a program structure and faculty research that will ensure the intellectual quality of the student experience.
iv) Availability of sufficient graduate-level courses such that students will be able to meet the requirement that two-thirds of their course requirements are in courses at this level.

PART C – EXTERNAL RELATIONSHIPS AND COMPARABLE INSTITUTIONS

1. External Relationships

If applicable provide information on any external relationships the program may have with external organizations or institutions (e.g., year abroad programs, partnerships, joint programs with colleges/universities). Include details such as: background information, start date for program, student enrolment, cost analysis, length and terms of agreement.

This is covered in a number of the sections above.

2. Comparable Institutional Programs

Provide an overview of the comparable programs offered by other institutions in Ontario and nationally where appropriate.

N.A. – no comparable programs exist

PART D – SUMMARY

Provide a summary of the program. As identified throughout the self-study comment on:

- areas of strength and weakness, opportunities and threats (SWOT analysis) that may shape the program's future (may include viability of the degree program, changes in societal demand)
- viability of the program in the next 5 years
- program goals and aspirations for the next 5-10 years.

See the text for the other ERS degrees.

PART E – APPENDICES

The Appendices section should include all supporting documentation. The following list of Appendices should be included as part of the self-study submission. Appendices A and B should be saved as separate documents due to their size. Appendices C through G may be included as part of the self-study at the end or saved as separate documents.

Appendix A	CVs	<ul style="list-style-type: none">• CVs for all TUFA Faculty Members should be included.• A CV template has been developed and should be used for cyclical reviews where possible.• CVs should be saved into one pdf file.• A summary list/cover page of faculty names should appear at the beginning and pdf tabs set for ease of review by external reviewers.
Appendix B	Course Syllabuses	<ul style="list-style-type: none">• One full year of syllabuses should be saved into a single pdf file.• A summary list/cover page of all course numbers and titles should be included at the beginning and pdf tabs set for ease of review by external reviewers.
Appendix C	Learning Outcomes	<p>Learning outcomes must be developed for all degree programs.</p> <ul style="list-style-type: none">• Please contact the Centre for Teaching and Learning for assistance in developing learning outcomes. Developing Learning outcomes will take some time.• This process will involve developing program goals, mapping of program goals and

		<p>courses to degree level expectations and methods of assessment and evaluation.</p> <ul style="list-style-type: none"> • <u>Undergraduate Degree Level Expectations (UUDLEs)</u> to be included for undergrad. • <u>Graduate Degree Level Expectations (GDLEs)</u> to be included for grad.
Appendix E	Enrolment, Retention, and Student Data	<ul style="list-style-type: none"> • All undergraduate data will be provided by the Office of Institutional Planning and Analysis. The Dean will review the data prior to forwarding to the program. We will try to share data by August 1st. • Graduate programs should consult with the Office of Graduate Studies with respect to available data.
Appendix E	University Calendar Copy	<ul style="list-style-type: none"> • Should include program requirements.
Appendix F	University Degree Requirements	<ul style="list-style-type: none"> • p.17-18 of Undergraduate Calendar – include text
Appendix G	<u>TUFA Collective Agreement</u>	<ul style="list-style-type: none"> • provide a link to the current collective agreement http://trentfaculty.ca/sites/default/files/TUFACA2012-2013.pdf
Appendix H	Other Documentation	Include any other relevant documentation.