

UNIVERSITY OF WINDSOR
UNIVERSITY PROGRAM REVIEW (UPR)
REPORT ON: Earth and Environmental Sciences
GRADUATE AND UNDERGRADUATE PROGRAMS
February 2019

EXECUTIVE SUMMARY

Review Preparation

In preparing this document, the Program Development Committee reviewed the following: Earth and Environmental Sciences' Self-Study (SS) (2013/2014), the report of the external reviewers (ER) (January 2018), the response from the Head (HR) (June 2018), and the response from the Dean (DR) (July 2018) to the above material. The external reviewers were: Dr. Alfonso Mucci, Department of Earth and Planetary Sciences, McGill University, Dr. Shaun Watmough, Department of School of the Environment, Trent University, and Dr. Tirupati Bolisetti, Department of Civil and Environmental Engineering, University of Windsor.

Undergraduate and Graduate Programs

At the undergraduate level, the Department offers a Bachelor of Science (Honours) in Environmental Science (with/without thesis), and a Bachelor of Environmental Studies*.

The Department offers a Minor in Earth Sciences, Minor in Environmental Science, and a Minor in Geography, as well as Major and Minor Concentrations in Earth and Environmental Sciences for the Bachelor of Interdisciplinary Arts and Science.

At the graduate level, the Department offers a Master of Science in Earth Sciences, and a PhD in Earth Sciences.

**At the time of the review, the Bachelor of Environmental Studies was offered through Inter-Faculty Programs, not the Department of Earth and Environmental Sciences, and as such did not form part of this review.*

Enrolments

Undergraduate*

	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018
Full-Time	48	42	104	97	95
Part-Time	5	5	17	18	10

**includes Bachelor of Environmental Studies enrolment numbers as of Fall 2016.*

Graduate

	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018
Full-Time	12	13	10	12	17
Part-Time	1	0	0	0	0

Human Resources

Faculty/Instructors

Tenure/tenure-track faculty	12 (including the head and 1 vacant position)
Sessional Lecturer	1
Ancillary Academic Staff as Learning Specialists	1
Limited-Term Appointment	1
Faculty members involved in graduate program delivery	10 (including 2 professors emeriti)

Full/Part-time Staff

Head Secretary	1
Geochemistry Technician	1
Secretary	0.4

FINAL ASSESSMENT REPORT (with Implementation Plan)

Significant Strengths of the Programs

During the period under review, the Department undertook to “[re-invent] itself, progressively closing down multiple programs and designing a single undergraduate program in environmental sciences.” (ER, p.1) Through these changes, the Department was able focus resources, create an undergraduate program that provides greater flexibility and breadth, and maintain strong undergraduate student involvement in research activities. (ER, p.2)

The undergraduate and graduate programs are supported by dedicated and highly qualified faculty, recognized nationally and internationally. (ER, p.5) The shift from earth sciences to environmental science at the undergraduate level will be reflected in the faculty complement over time, consistent with the Department’s strategic hiring plan. (HR, pp.2,3)

Opportunities for Program Improvement/Enhancements

The external reviewers repeatedly pointed to a disconnect between the undergraduate program and the graduate program, as a result of the shift to environmental sciences at the undergraduate level. “The AAU is currently limited in its capacity to reach its full potential and deliver an environmental program that is competitive with other programs in the province, and that strategic retirement replacements are required.” (DR, p.2) As retirements occur, the Department’s strategic faculty renewal plan will ensure new faculty appointments hold expertise in environmental sciences, thereby incrementally refocusing the graduate program. (HR, p.2) This, together with the external reviewers’ recommendation that the graduate programs in Environmental Sciences be folded (virtually or physically) into the Department, were suggested to address the disconnect. (ER, pp.9-10; HR, p.12) The question of greater depth of programming would also be addressed through strategic faculty renewal. (HR, p.3,4)

The External Reviewers raised serious concerns related to facilities renewal, from research labs to teaching rooms to corridors. (ER, p.4, p.8; HR, p.11) It is understood that discussions about a potential move to Essex Hall continue. (HR, p.8) However, the Department is encouraged to be prepared with a plan for space renewal should the move not materialize.

These and other opportunities for program improvements are captured in the recommendations listed below.

IMPLEMENTATION PLAN

Recommendations (in priority order)

(Final recommendations arrived at by the Program Development Committee, following a review and assessment of the External Reviewers report, the Head’s response, and the Dean’s response.)

Recommendation 1: That the Department distinguish itself from other environmental programs in the province/country by capitalizing on the University’s geographic location and focusing on large lakes-centric programming.

Agents: Head, faculty members in the department

Completion by: Fall 2022

Recommendation 2: That the Department, in consultation with other areas and working through the Dean of Science, work to build a stronger environmental focus in Science through greater cooperation between programs and the potential (physical or virtual) folding of units (e.g., EES, GLIER, Biology), in addition to cross-appointments from other Faculties.

Agents: Head, Dean

Completion by: Fall 2022

Recommendation 3: As EES continues with strategic faculty renewal, which will involve replacement of geoscientists with environmental scientists, that the Department report on its efforts to address the following two issues: 1) faculty in EES will contribute more students to the environmental science graduate programs, including supervision by EES faculty of students in these programs, and the AAU will need to be recognized for doing so for purposes such as IQAP review, and 2) at some point, the viability of the EES earth science graduate programs will need to be re-evaluated as the focus of the AAU continues to shift toward environmental education and research through strategic faculty renewal.

Agents: Head, Dean, GLIER Director

Completion by: Fall 2020

Recommendation 4: That the Department report on the progress made with strategic faculty renewal and the impact of this renewal on the area's capacity to deliver a successful environmental programming.

Agents: Head, Dean

Completion by: Fall 2024

Recommendation 5: That the Department review its curriculum to ensure that it continues to provide environmental programming that capitalizes on the strength of environmental expertise within the university; and that the Department report on efforts to pursue alternative modes of course delivery such as online and blended courses.

Agents: Head, faculty members

Completion by: Fall 2022

Recommendation 6:

- a) That the Department submit course-level learning outcomes for its graduate courses, and for ESCI-2000. Science, Technology, and Society and ESCI-4808. Special Topics in Earth and Environmental Sciences.
- b) That the Department engage in curricular planning and mapping for each of its programs, including submitting assessment methods for each of its courses that clearly correspond to the course-level and program-level learning outcomes.

[The Department has submitted learning outcomes to Senate for each of its graduate and undergraduate programs, and for all but two of its undergraduate courses.]

Agents: Department Council, Head, CTL

Completion by: Fall 2020

Recommendation 7: That the Department better advertise or even require that undergraduate students meet at least once in their first year with the undergraduate program advisor so they are made aware of the various academic streams/specialties available to them within the program and what courses must be successfully completed to satisfy the accreditation requirements of APGO should the student wish to pursue this path.

Agents: Head, faculty members

Completion by: Fall 2020

Recommendation 8: That the Department work with Alumni Affairs on an approach to tracking and contacting alumni in order to establish sustained relationships with alumni, by informing and engaging them in unit activities (e.g., career evenings, homecomings, etc.) and, ultimately, nurturing them into a culture of giving in support of further like activities as well as development of academic and research endeavours (e.g., student field trips, purchase of new equipment, endowed faculty positions, etc.).

Agents: Head, Dean, Alumni Affairs

Completion by: Fall 2022

Recommendation 9: That the Department report on its efforts to build and strengthen community connections (e.g., alumni) in support of experiential learning opportunities for students and potential job opportunities post-graduation.

Agents: Head, Dean, Office of Experiential Learning

Completion by: Fall 2020

Recommendation 10: In light of the recent loss the Lab Demonstrator position, that the Department assess and make a case to the Dean to review the administrative and technical support structure both within the unit and the Faculty of Science such that efficiencies are obtained.

Agents: Head, Dean

Completion by: Fall 2020