

**Cyclical Review
Follow-up Report**

Template and Guidelines

Cyclical Review of the Graduate Program in Earth Sciences

Degree(s):

Doctor of Philosophy in Earth Sciences

Master of Science Earth Sciences

Submitted to:

Graduate Program Evaluation Committee
Faculty of Graduate and Postdoctoral Studies

[Date]



Cyclical Review Follow-up Report

Graduate Program in Earth Sciences
 Cyclical review year 2012-2013
 Outcome categorization - Good Quality with Report June 30, 2016

Follow-up Report approved by the Graduate Program Evaluation Committee
 Faculty of Graduate and Postdoctoral Studies

In accordance with the University's Institutional Quality Assurance Process (IQAP), following the completion of the cyclical review, a program is given an outcome categorization. The following template and guidelines are for programs that received an outcome categorization of 'good quality with report'. The recommendations to be addressed in the Cyclical Review Follow-up Report are listed in the Final Assessment Report and Executive Summary of the most recent cyclical review.

Name of Program Reviewed	Earth Sciences
Degrees	At the University of Ottawa: <ul style="list-style-type: none"> • Doctor of Philosophy in Earth Sciences • Master of Science, Earth Sciences At Carleton University: <ul style="list-style-type: none"> • M.Sc. Earth Sciences • Ph.D. Earth Sciences
Responsible academic units	Ottawa-Carleton Geoscience Centre (OCGC)
Fields	There are six fields in the program: <ul style="list-style-type: none"> • Environmental Geoscience • Geochemistry/Petrology • Geomatics/Geomathematics • Mineral Resource Studies • Sedimentary Systems • Tectonics/Geophysics
Outcome categorization	Good quality with report, to be submitted by June 30, 2016
Recommendations	It is recommended that the OCGC: <ol style="list-style-type: none"> 1. Take concrete steps to increase the course offerings, and in particular, to offer a greater number of advanced graduate seminars, whether through new hires, additional integration of adjuncts, introduction of modular options, or other appropriate means. 2. Provide a projected timeline for new hires at both institutions. 3. Investigate the possibility of securing additional dedicated administrative support for the program (e.g. part-time program administrator). 4. Evaluate whether the six fields that have been defined for the program add value. 5. Continue to carefully monitor each student's course pathway to ensure adherence to provincial standards with respect to double-coded courses.

	<ol style="list-style-type: none"> 6. Explore the possibility of incorporating additional strategic planning exercises (e.g. a bi-annual retreat) alongside the regular Board of Management meetings. 7. Consider applying for funding (e.g. NSERC CREATE grant) to provide additional support for the mentoring, professional development and career development of students. 8. Encourage uOttawa teaching assistants to attend the TA workshops organized regularly by the uOttawa Centre for University Teaching. 9. Work to raise the visibility of adjunct professors in the program.
<p>As stipulated in the Final Assessment Report, recommendations 1 through 4 have been addressed and are reported on below. The remaining recommendations will be addressed at the time of the next cyclical evaluation which will be completed by 2020-2021.</p>	

Recommendations for follow-up

<p>1) Take concrete steps to increase the course offerings, and in particular, to offer a greater number of advanced graduate seminars, whether through new hires, additional integration of adjuncts, introduction of modular options, or other appropriate means.</p>
<p>Two new faculty members have been hired at uOttawa and two at Carleton, providing a significant number of graduate course offerings. New graduate courses have been introduced in the following subject areas in the past three to five years:</p> <ul style="list-style-type: none"> • Advanced Mineralogy (UO; Dare) • Radioisotope Geochemistry (UO; Cornett) • Geochronology and Isotope Tracers (UO; O’Neil) • Aqueous Geochemistry and Modelling (UO; Al) • Seismology (UO; Audet) • Active Tectonics (UO; Audet) • Vertebrate Paleontology (CU; Maddin) • Hydrogeology (CU; Amos) • Reactive Transport Modelling (CU; Amos) • Natural Hazards (CU; Samson) • Advanced Igneous Petrology (CU; Scientist in Residence, Ernst) • Research Topics in Earth Sciences (CU) • Field Studies (CU) • Modelling Environmental Systems (CU; Burns) • Aquatic Ecosystem Change During the Anthropocene (CU; Vermaire) • Geocryology (CU; Gruber) <p>In addition, at UO there are several new field courses that are run by a rotating group of professors during which students have the opportunity to study diverse geologic settings – locations change from year to year.</p> <p>At Carleton University the ties with Environmental Sciences have been strengthened with the hiring of Richard Amos who is cross listed between Environmental Sciences and Earth Sciences.</p>

2) Provide a projected timeline for new hires at both institutions.

University of Ottawa: Currently, there is an active search for a new faculty member to contribute to teaching and research in hydrogeology or more generally to the environmental science program. A decision is expected soon regarding the hiring of a new position in a research field that will expand strength in accelerator mass spectrometry. In addition, it is expected that there will be two new faculty hired in the next three years to replace retirements.

Carleton University: The top priority for the Carleton department is an Endowed Chair in Resource Geology. \$5,000,000 is needed; looking for \$3,000,000; CU has pledged \$2,000,000 in matching funding. This position is the highest Advancement priority for Science. The Carleton Earth Science strategic plan calls for a new basin analysis/energy resources position. In 2015-16 there was an attempt made to fill this position through an application for a Banting PDF Fellowship. The application was well-rated but unsuccessful. The intent is to persist with a follow-up application in 2017-18. At Carleton, Banting PDF's transition to a tenured faculty position at the end of the PDF period. The Department is currently in the processes of hiring a Geochemist and a Resource Geologist, both to replace retired faculty.

3) Investigate the possibility of securing additional dedicated administrative support for the program (e.g. part-time program administrator).

At Carleton, the job description of the Departmental Administrator includes support of Graduate Affairs and the OCGC. In 2014-15 a full-time Undergraduate and Office administrator position was created, replacing a part-time Receptionist position. The duties of the new administrator include supporting and advertising seminars and events, thus Carleton is now able to cover most OCGC-related administrative activities.

4) Evaluate whether the six fields that have been defined for the program add value.

The six fields are simply descriptors of Earth Sciences subdisciplines that inform students and researchers external to the OCGC of the program content. Prospective graduate students are attracted by a supervisor and his/her research interests and projects. We maintain descriptors that define the scope of the OCGC research with respect to Earth Sciences subdisciplines, but these must be changeable through time so as to reflect changes due to new hires and retirements.

The following research specialization themes are also used to reflect and promote the research scope of the OCGC.

1. Evolution & Life History
2. Energy and Mineral Resources
3. Environmental Geochemistry and Geomicrobiology
4. Groundwater Protection
5. Earthquake Science, Natural Hazards & Geodisasters.
6. Earth Systems: Lithosphere, Sea Level & Climatic Dynamics.
7. Imaging & Analysis of Materials.
8. Earth & Planetary Sciences: Geochemistry, Geodynamics & Tectonics.