



Date: March 6, 2013

To: Rebecca Aanerud, Associate Vice Provost and Associate Dean, The Graduate School

From: Clare M. Ryan, Director, Program on the Environment, College of the Environment

RE: Graduate Certificate in Environmental Management Interim Report

In response to your recent request, please accept this Interim Report that follows up on the Graduate Certificate in Environmental Management 2007-2008 Academic Program Review. In their letter to the Provost at that time, the Graduate School Council recommended a limited review (interim report) be submitted to The Graduate School during the 2012-2013 academic year. The Graduate Council request quotes as follows:

"... In light of the potential changes in administrative structure in the near future, the Council recommends a limited program review be conducted in five years (2012-2013). As part of this review, the program should write a focused report that specifically addresses (1.) whether the appropriate balance has been found between management and natural science in the curriculum, and (2.) whether students have access to the classes they need for the program."

The purpose of this report is to convey progress made on curricular content and design, access to courses, and administration of the Environmental Management (EM) Certificate. More detailed information on the EM Certificate can be found on the [PoE webpage](#). I would be happy to speak with you at your convenience if you need additional information.

CURRICULAR CONTENT AND DESIGN

An interdisciplinary approach and systems thinking have been valued features of the EM Certificate since it was established in the early 1990s. With respect to the question of whether the appropriate balance has been found between management and natural science in the curriculum, we respond with an emphatic "yes." The curriculum provides a foundation for a focus on environmental management and implementation, based on an understanding of established science. The EM Certificate emphasizes practical application of scientific knowledge through coursework and projects, and is based on knowledge gained through a student's primary course of study and its application by interdisciplinary project teams. The integration of business, policy and management dimensions to environmental decision making is unique to the EM Certificate.

The current EM Certificate curriculum consists of coursework in three core "domain areas" (Environmental Policy; Science Application; and Business and the Environment) and a two-quarter Keystone Project. The curriculum provides students with a fundamental background in environmental management and decision-making processes from these three perspectives. Below I describe the key curricular design changes that were instituted immediately following the Program Review. These changes have allowed more students to complete the Certificate because of the lower total credits required, as well as increased flexibility and access to courses.

- **Two-Quarter Keystone Project.** The year-long Keystone Project sequence was changed to a two-quarter Keystone Project sequence (4 credits per quarter, for a total of 8 credits), offered Autumn and Winter quarters. This balances the need for flexibility in the students' schedules to complete the core coursework with the need for enough time to devote to a substantial Keystone Project, while requiring fewer total credits. In addition, EM students are now required to complete at least a subset of (but preferably all) core courses *before* enrolling in the Keystone Project, or take the remainder concurrently with the project.
- **Financial support for Keystone Projects.** The conclusion of the Luce Foundation funding in 2010 meant that a new financial model was needed to sustain the Keystone Projects. A Keystone Project fee was instituted, in which partner organizations contribute financially towards project costs. The current fee is \$10,000 – a clear indication of the value of the Keystone Projects by partner organizations inside and outside the UW. Recent Keystone partner organizations include: National Oceanic and Atmospheric Administration (NOAA); UW Office of Environmental Stewardship and Sustainability; and the American Farmland Trust, to name just a few.
- **Elective course requirement dropped.** In 2011, the EM Steering Committee, Graduate Program Coordinator, and PoE Director unanimously agreed to eliminate the elective course requirement. This change was discussed and supported by the College of the Environment Curriculum Committee and approved by The Graduate School.

Reducing the number of credits for the Keystone Project (from 12 to 8), along with eliminating the 2-3 credit elective requirement, brings the total credit requirements for the EM Certificate to ~19-20. This total is more consistent with other UW Graduate Certificate Program credit requirements, and improves the program's ability to attract and recruit a larger and more diverse pool of students.

ACCESS TO COURSES

The Program Review suggested that some students faced challenges in accessing core courses. To address this challenge, the EM curriculum was significantly restructured immediately following the Program Review, as discussed above. In addition, the choices for core courses were expanded in order to ensure adequate access.

- **Increased Choice in Core Courses.** Within each core domain area, additional core courses have been identified, so that each domain area provides students with a choice of two or three courses to meet the requirement. Since making this change, we see no evidence that students have not completed the EM Certificate due to an inability to access the courses they need. The current EM Certificate coursework is depicted in the table below.

Domain	EM Certificate Coursework
Policy	PBAF 590: Environmental Policy Processes (4 cr) POLS 575: Public Policy Processes (5 cr) SEFS 571: Resource Policy and Administration (4 cr)
Business and Environment	ENVIR 502: Business Strategy and Environment (4 cr) IBUS 545: Cases in Sustainability (4 cr)
Science Application	ENVH 577: Risk Assessment for Environmental Health Hazards (4 cr) ME415/CEE495/ENVIR415: Sustainability and Design for Environment (3 cr) PBAF597: Role of Science in Environmental Decisions (4 cr)

ADMINISTRATION OF THE EM CERTIFICATE

Following the Program Review, the EM Certificate program has undergone two key changes that have strengthened the program's structure and administration.

- Creation of the College of the Environment.** At the time of the Program Review, there was great uncertainty surrounding the potential creation of a College of the Environment, as well as where the ultimate "home" would be for the Program on the Environment (PoE), which over time had been under the Office of Undergraduate Education, as well as the "Council of Environmental Deans." The uncertainty has been resolved, and PoE became a unit within the College of the Environment when it was formed in 2009. The Director of PoE is a member of the College Executive Committee (Chairs and Directors of all units in the College), and also serves on the College Curriculum Committee. This provides a very stable and appropriate home for PoE and the EM Certificate, and has greatly increased the visibility of the EM Certificate.
- Administration of the EM Certificate.** The EM governance model was also restructured following the Program Review. Instead of hiring a separate EM Director, which had been the model for many years, the Graduate Program Coordinator manages the program with direct oversight by the Director of PoE. This clarifies roles and responsibilities, emphasizes that the EM is contained within and managed by PoE, and saves financial resources. An interdisciplinary Steering Committee of faculty from across UW continues to provide strategic guidance, and an Admissions Subcommittee reviews student applications and makes admission decisions.

LOOKING AHEAD

The EM Certificate Program is a powerful example of PoE's commitment to training the environmental leaders and managers of tomorrow. The 2007-2008 Program Review provided timely and useful insights and suggestions, spurring changes that have resulted in a stronger and more robust Certificate program.

This year alone, the EM Certificate has been featured in the [The Seattle Times, KPLU, and KUOW](#), as well as in a recent article in [Nature](#) highlighting the EM Certificate's leadership and contributions to sustainability education.

The Certificate has a healthy number of students, and continues to feature interdisciplinarity in the diversity of the students as well as the types of course and projects. Students from 13 different graduate programs have participated in the Certificate in the last 5 years, from programs such as Civil and Environmental Engineering, Evans School of Public Affairs, Foster School of Business, Earth and Space Sciences, and Geology. The EM program now annually hosts three to four Keystone Projects, and awards certificates to about 20 students. Student demand for the program is strong and admission is competitive.

YEARLY SNAPSHOT	
Year	Students
2012-2013	18
2011-2012	15
2010-2011	21
2009-2010	9
2008-2009	15
TOTAL EM STUDENTS, 2008-2013	78

Continuing to grow and improve the Certificate is a top priority. To do so, we are addressing:

- **Student Recruitment.** In an effort to maintain the interdisciplinary focus of the EM program we are working closely with departments across UW to ensure that their students have access to the EM program. For example, earlier this year we negotiated an arrangement with Civil & Environmental Engineering, whereby the department will pay for half the cost of the EM program for their professional track students. We are also working to increase visibility and strengthen relationship with in the Foster School of Business and within the College of the Environment.
- **Keystone Project Stability.** We seek long-term partnerships with Keystone Project hosts as a way to provide a stable foundation to allow for continued growth. In addition, we are actively pursuing new private funding sources to support Keystone Projects with nonprofit partners that face challenges in paying the \$10,000 fee.