Environmental Science QEP Impact Report 2012
Environmental Science Program
College of Arts and Sciences
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The ES program began in 2004, awarded its first degrees in 2007, and had its first program review in 2011. As part of our 2011 self study we developed new learning outcomes for our program, and in response to knowledge gained from our self study and the external review report we completed a major curriculum revision based on the new learning outcomes, aligned them with QEP outcomes and developed a plan to assess the outcomes in 2012. The new curriculum will be implemented Fall, 2013. Because most of our new assessment will not begin until the new curriculum is implemented, this report will focus on assessment of the two QEP Outcomes which were not affected by curricular change:

1. Clarify Purpose and Values
2. Integrate information from a variety of contexts

These QEP outcomes align with our ES Student Learning Outcomes:

1. Students will clarify purpose and values through designing a student-specific curriculum plan of upper level courses that relates to their career goals
2. Students will gain an interdisciplinary perspective toward environmental sustainability through integrating information from a variety of contexts

The QEP and SLO outcome #1 listed above are assessed through a 2-year plan. The QEP and SLO outcome #2 are partially assessed through these same 2-year plans as described below.

The 2-Year Plan: Students earning a BS in ES must complete 18 upper level electives (16 in the new curriculum) with courses that can come from any discipline on campus. To ensure the suite of courses selected by an ES major has appropriate rigor and meets the outcomes of the ES curriculum, students must complete a “2-year plan”. These plans require students to identify (1) their career goals and (2) basic qualifications needed to attain these goals (from job descriptions students can find). Students are required to list the courses they plan to take in each of their four remaining semesters (along with alternatives) and they must describe why these particular courses will help them achieve their educational and career goals. Many of the upper level courses at WCU are offered only once per academic year or only every other year. The plans were intended to help students design a curriculum around when courses are offered, help balance student course loads, and provide a mechanism of quality control within a highly flexible curriculum. The 2-year plans are a degree requirement and are expected to be submitted to a student’s advisor for approval prior to a student completing their last 60 credits at WCU. The plans are scrutinized to ensure they do not represent a less rigorous version of another degree (e.g., “geology light”), and that the plans reflect the interdisciplinary outcomes of the ES program.

Assessment of the 2-year plans and upper elective choices by the 23 students who graduated through May 2011 revealed the following trends:

1) Some students develop thematic plans such as aquatic sustainability where they selected courses in biology, geology, chemistry, environmental health (ENVH) and natural resource conservation and management (NRCM) related to water. Other students chose to focus their courses to provide additional depth to the interdisciplinary breadth of their degree. Often these latter students accumulate enough credits to minor in another discipline.
2) Students are taking courses in an interdisciplinary way: six students took courses in 5 different disciplines, seven students took courses in 4 different disciplines, and six students took courses in 3 different disciplines.

3) The interdisciplinary outcome is also reflected in the relatively even dispersal of ES graduates across upper level science disciplines: 17 students enrolled in Biology courses, 17 in ENVH courses, 16 in Geology courses, 13 in NRCM courses, 8 students in Chemistry courses. In addition, 3 students took Philosophy and Religion (PAR) courses, 2 students took MATH courses, and 1 student each took Anthropology, Sociology, Communications, Elementary Education and Science Education courses to fulfill their upper level electives.

4) Four of the 23 ES graduates fulfilled most of their upper level electives through special programs. Two students attended the UNC Chapel Hill’s Institute for the Environment at the Highlands Biological Field Station. This 18-credit intensive resident field experience includes field-based environmental ecology courses and environmental research projects. One of the ES students analyzed anaerobic digestion for the Jackson County Green Energy Park landfill facility for her research project and the other student conducted a herpetological inventory and monitored water quality. Two other ES students fulfilled most of their upper level electives through the International Program at WCU. One student attended a university in Australia and the other attended a university in New Zealand. In both cases, the environmental courses these students took overseas were equivalent in learning outcomes for upper level environmental electives at WCU, and both students were engaged in environmental research during their international experience.

5) Although students realized the value of the 2-year plan once they have completed it, getting students to write meaningful plans and in a timely manner was an ongoing challenge. Faculty had to continuously “nag” students to get it done, and many times the plans were not completed until the semester before or semester of graduation.

Based on student feedback, it appeared the problem completing the plans was matching courses with semesters students planned to take them, and clarity of the requirements as stated on the 2-year plan instructions needed improvement. Several changes were made to simplify and clarify the 2-year plan requirements and the revised 2-year plan instructions now state a student must write an essay that includes:

- A one-page (or more) narrative of your career goals that describes actual examples of skills and knowledge needed to achieve those career goals. For example, if your goal is to work for a consulting firm, look up job descriptions for consulting firms to determine what they require/desire for their employees.
- A list of 8 courses you will select from to fulfill the upper level electives requirement
- For each of the 8 courses in the list you MUST describe why you want to take the course by:
  - Listing skills and/or knowledge you expect to obtain from the course (WCU course catalog has course descriptions or ask the instructor for a copy of their syllabus)
  - Indicating how the skills/content in the course will help you obtain the career goals you described in your narrative
- An explanation of how this collection of 8 courses meets the interdisciplinary goal of the ES degree
In addition to the improved instructions and simplified tasks, students are introduced to the 2-year plan requirement during ES150 which is the first ES majors course that is taken their first fall semester at WCU. Students turn in a draft 2-year plan as a graded assignment in ES150. The final 2-year plans will be turned in as a graded assignment prior to advising day during the students’ second majors course (ES250) which is taken in the spring of their sophomore year (or second semester if a transfer student). Finally, we developed a grading rubric we provide to the students so they can self-assess their document before turning it in. The ES Executive Committee has discussed creating a benchmark in degree audit as a mechanism to ensure timely compliance with the 2-year plan requirement. However, we are waiting to see if the changes and strategies described above result in better compliance of the 2-year plan requirement. Thus far since adding the draft 2-year plan as a graded assignment in ES150, we have had 100% compliance with the draft plans. We are offering ES250 for the first time spring 2013 where students will be able to revise their draft plan from ES150 and turn it in to their advisor to complete the 2-year requirement.