“CLOSING THE LOOP”: PROGRAM IMPROVEMENT DOCUMENTATION AY 2015-2016

Department: Environmental Sciences

Assessment Coordinator: John Rybczyk

Departmental Mission: To educate students through engagement across a breadth of environmental sciences; To conduct basic and applied research that expands knowledge about the environment; To disseminate knowledge about the environment in service of the public good.

Department Student Learning Goals: Upon graduation, department majors will be able to:

1. Apply quantitative skills to environmental issues
2. Apply critical thinking (analytical) skills to environmental issues
3. Write and speak effectively to professional and lay audiences about issues in the field
4. Use theoretical knowledge of environmental sciences in real world applications
5. Incorporate multiple disciplines into environmental sciences

Measures:

1. Number of students completing: 1) senior thesis or projects (ESCI 498a or ESCI498c); 2) REU, SULI, or similar external research programs designed for undergraduates; 3) Independent Studies courses with a research component; or 4) senior internship (ESCI 498b).
2. Number of undergraduate presentations at public meetings or conferences.
3. Campus wide initiatives led by Huxley students and faculty.
4. Number of 400 level courses with ESCI rubric compared to 400 level courses with other rubrics (using both credit numbers and number of classes).
5. Alumni survey on the Importance of Learning Goals in the workplace and whether they were achieved at Huxley. Conducted every 5 years by Huxley College with questions provided by departments/programs.
6. Biennial focus group discussion with current senior students led by the Committee.
7. Analysis of Capstone student projects by Capstone instructors – form will be provided to Capstone instructors.
8. Number of Writing Proficiency credits completed.
9. Number of lab reports where students analyze and interpret numbers and data through writing to bring meaning to the data.
This year’s assessment task is to document program improvements informed by SLO assessment and other forms of evidence.

<table>
<thead>
<tr>
<th>Type of Change</th>
<th>SLOs Targeted</th>
<th>Description of Program Improvement</th>
<th>Rationale and Level of Faculty Involvement</th>
<th>Evidence that will demonstrate if this change improves student learning.</th>
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<tbody>
<tr>
<td>Curricular, Resources</td>
<td>1</td>
<td>Offer additional sections of ESCI 340 Biostatistical Analysis. Across all sections of ESCI, teach and use open source R statistical platform. Specifically list ESCI 340 as a pre-requisite for appropriate upper division ESCI classes.</td>
<td>As part of the development of our SLOs we identified a need for early and easy access to our biostats class for all ESCI majors and an opportunity to revisit and practice stats (experimental design and data analyses) in upper division classes. As a result and as evidence for faculty involvement, seven 400 level courses now require ESCI 340 as a pre-requisite. This is an increase from only two courses that explicitly listed 340 as a pre-requisite in 2012. We also offer ESCI 340 every quarter and occasionally twice per quarter if there is bottleneck.</td>
<td>Increased access to ESCI 340 (shorter waiting lists or all student having access in the first quarter of their academic career). Performance in upper division ESCI classes requiring and using statistics should increase. Specific classes included: ESCI 407 Forest Ecology, 423 Past Environments of the Pacific Northwest, 435 Landscape Ecology, 440 Wetlands Ecology, 463 Wetlands for Wastewater Treatment, 492 Climate Change, and 497Y Plant and Soil Interactions.</td>
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<td>Faculty Support, Curricular, Resources</td>
<td>1, 2</td>
<td>Provide additional TA support to open more sections of high demand lab and field classes.</td>
<td>Our department has doubled in sized over the past decade without a commensurate increase in resources or faculty. By adding TA-led laboratory sections (and concomitantly increasing the number of seats in the respective faculty’s lecture section) we provide additional hands on experience, practice and application of analytical and quantitative skills. During this assessment period additional sections were added to ESCI 322, 361, 430, 463 and 440.</td>
<td>Number of 400 level courses with ESCI rubric compared to 400 level courses with other rubrics (using both credit numbers and number of classes). Number of lab reports where students analyze and interpret numbers. See, for example, Tables 1 and 2 from 2013 – 2014 assessment.</td>
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### Pedagogy

| 3 | When appropriate add writing proficiencies components (i.e, WP 1, 2, or 3) to existing classes. | As part of our 2012 – 2013 assessment, which included alumni surveys, additional writing practice was identified as an area for improvement. As of this writing, 16 upper division ESCI classes now have a WP designation. In 2012 – 2103, ESCI students took 349 WP courses during the assessment timeframe. This included 205 unique students taking at least 1 WP course for an average number of 1.7 WP courses per student. | Number of writing proficiency credits completed successfully. See Table 1 from 2012 – 2013 report. |