### Academic Program: CAS: Environmental Science - MS

**Unit's Primary Department:** Environmental Science

**Learning Outcome: Scientific Knowledge**

Define the major scientific underpinnings of emerging environmental issues.

- **Outcome Year:** 2009-2010
  - 2010-2011
  - 2011-2012
- **Start Date:** 04/06/2009
- **Outcome Status:** Active Learning Outcome

#### Assessment Plan

<table>
<thead>
<tr>
<th>Assessment Measure</th>
<th>Target</th>
<th>Schedule/Cycle</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Papers: In this assignment, the student must provide a well-supported position on an environmental issue. Position papers will be assigned across the core curriculum and compiled for analyses. <strong>Measure Type:</strong> Written Assignment</td>
<td>A numerical target will be developed using a grading rubric after this assessment cycle.</td>
<td>A subset of the papers will be randomly selected from cross-section of courses, and then independently evaluated by at least 2 different faculty using a standard rubric. This will be done every three years by the graduate committee and reported at a faculty meeting.</td>
<td>Yes</td>
</tr>
<tr>
<td>Comprehensive Exam: All students must pass a written comprehensive exam after their first and before their last semester. The exams are graded pass/fail by at least two ENVS faculty members. <strong>Measure Type:</strong> Quiz/ Exam</td>
<td>Data on rates of overall passing/failure and by topic area will be used to assess appropriateness of course work, etc.</td>
<td>The exam is administered twice annually and the exam is evaluated by at least two faculty. Each question will be graded according to the following scale: fail, pass, pass with distinction. The graduate chair will compile exams and evaluations which will be reviewed by the graduate committee biennially. The graduate chair will present the finding during a faculty meeting.</td>
<td>Yes</td>
</tr>
<tr>
<td>Significant Research Paper: Students are required to submit an SRP in their final semester. These SRPs are evaluated by at least 2 of the ENVS faculty. <strong>Measure Type:</strong> Final Paper/ Final Project</td>
<td>A numerical target (e.g. proportion passing with distinction) will be developed using a grading rubric after this assessment cycle.</td>
<td>All of the papers will be evaluated using a standard rubric to be developed based on the learning outcomes and assigned one of the following grade: fail, pass, pass with distinction. This will be done annually by at least two ENVS faculty. There will be a general discussion at the end of the academic year to assess the performance of the students.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Learning Outcome: Quantitative Skills

Develop and apply quantitative skills in evaluating environmental problems.

- **Outcome Year:** 2009-2010
  - 2010-2011
  - 2011-2012
**Learning Outcome: Translate Scientific Information**

Be able to translate scientific information into a form usable by the general public.

**Outcome Year:** 2009-2010  
2010-2011  
2011-2012

**Start Date:** 04/06/2009  
**Outcome Status:** Active Learning Outcome

<table>
<thead>
<tr>
<th>Assessment Measure</th>
<th>Target</th>
<th>Schedule/Cycle</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Papers: In this assignment, the student must provide a well-supported position on an environmental issue. Position papers will be assigned across the core curriculum and compiled for analyses. <strong>Measure Type:</strong> Written Assignment</td>
<td>A numerical target will be developed using a grading rubric after this assessment cycle.</td>
<td>A subset of the papers will be randomly selected from cross-section of courses, and then independently evaluated by at least 2 different faculty using a standard rubric. This will be done every three years by the graduate committee and reported at a faculty meeting.</td>
<td>Yes</td>
</tr>
<tr>
<td>Internship and Independent Study Evaluations: All students are required to do an internship. Grade for this includes an evaluation from the internship advisor using a standard form with questions on a numerical grading scale. <strong>Measure Type:</strong> Field Work/Internship</td>
<td>A numerical target will be developed after this assessment cycle.</td>
<td>Numerical scores from all of the evaluation forms will be analyzed at the end of each academic year by the departmental internship advisor. The advisor will report findings during a faculty meeting.</td>
<td>Yes</td>
</tr>
<tr>
<td>Comprehensive Exam: All students must pass a written comprehensive exam after their first and before their last semester. The exams are graded pass/fail by at least two ENVS faculty members. <strong>Measure Type:</strong> Quiz/Exam</td>
<td>Data on rates of overall passing/failure and by topic area will be used to assess appropriateness of course work, etc.</td>
<td>The exam is administered twice annually and the exam is evaluated by at least two faculty. Each question will be graded according to the following scale: fail, pass, pass with distinction. The graduate chair will compile exams and evaluations which will be reviewed by the graduate committee biennially. The graduate chair will present the finding during a faculty meeting.</td>
<td>Yes</td>
</tr>
<tr>
<td>Significant Research Paper: Students are required to submit an SRP in their final semester. These SRPs are evaluated by at least 2 of the ENVS faculty. <strong>Measure Type:</strong> Final Paper/Final Project</td>
<td>A numerical target (e.g. proportion passing with distinction) will be developed using a grading rubric after this assessment cycle.</td>
<td>All of the papers will be evaluated using a standard rubric to be developed based on the learning outcomes and assigned one of the following grade: fail, pass, pass with distinction. This will be done annually by at least two ENVS faculty. There will be a general discussion at the end of the academic year to assess the performance of the students.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Position Papers: In this assignment, the student must provide a well-supported position on an environmental issue. Position papers will be assigned across the core curriculum and compiled for analyses.

**Measure Type:**
Written Assignment

**Target:**
A numerical target will be developed using a grading rubric after this assessment cycle.

**Schedule/Cycle:**
A subset of the papers will be randomly selected from cross-section of courses, and then independently evaluated by at least 2 different faculty using a standard rubric. This will be done every three years by the graduate committee and reported at a faculty meeting.

**Active:**
Yes

---

Internship and Independent Study Evaluations:
All students are required to do an internship. Grade for this includes an evaluation from the internship advisor using a standard form with questions on a numerical grading scale.

**Measure Type:**
Field Work/ Internship

**Target:**
A numerical target will be developed after this assessment cycle.

**Schedule/Cycle:**
Numerical scores from all of the evaluation forms will be analyzed at the end of each academic year by the departmental internship advisor. The advisor will report findings during a faculty meeting.

**Active:**
Yes

---

Significant Research Paper: Students are required to submit an SRP in their final semester. These SRPs are evaluated by at least 2 of the ENVS faculty.

**Measure Type:**
Final Paper/ Final Project

**Target:**
A numerical target (e.g. proportion passing with distinction) will be developed using a grading rubric after this assessment cycle.

**Schedule/Cycle:**
All of the papers will be evaluated using a standard rubric to be developed based on the learning outcomes and assigned one of the following grade: fail, pass, pass with distinction. This will be done annually by at least two ENVS faculty. There will be a general discussion at the end of the academic year to assess the performance of the students.

**Active:**
Yes

---

**Learning Outcome: Policy Making**

Describe how science can inform policy-making.

**Outcome Year:**
2009-2010
2010-2011
2011-2012

**Start Date:**
04/06/2009

**Outcome Status:**
Active Learning Outcome
<table>
<thead>
<tr>
<th>Assessment Measure</th>
<th>Target</th>
<th>Schedule/Cycle</th>
<th>Active</th>
</tr>
</thead>
</table>

performance of the students.