

ENVIRONMENTAL STUDIES ASSESSMENT REPORT – 2014

Submitted by Dan Hornbach – September 2014

Introduction

The Environmental Studies Department developed its Departmental Assessment Plan during the 2008-2009 academic year. This plan was provided to the Provost and Institutional Research department in April 2009. Based on this plan there are 4 tasks in the assessment plan that are to be undertaken each year:

1. Transcript analysis of graduates,
2. A senior survey,
3. An assessment of graduates' performance relative to the learning objectives set out by the department, and
4. Discussion of #1-3 above and planning to improve the education of our students.

Last year we indicated we would undertake 7 tasks in response to our assessment discussion. Our progress on these tasks is detailed below.

1. We've begun to make a list of possible changes to our assessment tool for an update in 2014-2015.
 - a. We provided an updated assessment plan to Kendrick Brown in Feb. 2014. This is found in Appendix A.
2. We will update the senior seminar to clarify some of the questions so that seniors will better understand what information we are trying to gather.
 - a. We utilized the same survey in 2014 since this was the sixth year of using the survey and we wanted to have comparable results. We will update the survey for use in 2015.
3. We will ask seniors to indicate the division in which their emphasis lies so that we can see whether students in different areas of ES have different responses to various questions.
 - a. We will implement this with our new survey in 2015.
4. We will continue to strive to infuse more international content in our courses and move toward cross-listing more courses with the International Studies department and consider attempting to certify courses for the Internationalism General Education Requirement.
5. We are considering changing the required introductory science class for the major. Currently students must take either ENVI 133 or 140. We may instead introduce a new course, Environmental Biology and then allow students to take either ENVI 140 or the new course. We may continue ENVI 133 as a non-lab course for non-ES students to meet their science distribution requirement.
 - a. Dan Hornbach explored this possibility and in discussion with the department decided to keep the current ENVI133 as one of the introductory courses for the time being. He and Jerald Dosch will consider adding some new labs with a more biological focus in ENVI133.

6. We will continue to bring a mix of individuals engaged with environmental issues (activists, academics, business persons, government officials, etc.) to speak in the EnviroThursday series or as guest speakers in courses to provide students with exposure to the wide range of careers available to them.
 - a. This was done. See www.macalester.edu/academics/environmentalstudies/envirothursday/
7. We have decided that the our earlier set of 6 learning objectives are still valid for our majors but they are more appropriately labeled “goals” rather than “outcomes”. We will develop a new set of measureable outcomes for each of these goals and we have identified specific course where most of the outcomes can be measured. We will develop these outcomes in the fall of 2014 and begin using them in our 2014-15 assessment.

Again this year we undertook tasks 2-4 in our assessment plan. We did not conduct a transcript analysis of graduates based on a recommendation from Kendrick Brown, Associate Dean of the Faculty, that we do this every few years. Given that this is the sixth year using our original assessment plan we decided to stay with our prior assessment activities. These will change based on the new assessment plan we provided in Feb. 2014 (Appendix A).

The Department met on May 8, 2014 to discuss the outcomes of the senior survey and to examine the rubrics for individual students.

We believe that these activities will allow us to continue to improve upon our strong departmental programs.

Results of 2014-2014 assessment activities

The ES curriculum requires our students to declare an emphasis within ES in addition to fulfilling a broader set of requirements. The next section describes the distribution of emphases declared by our majors.

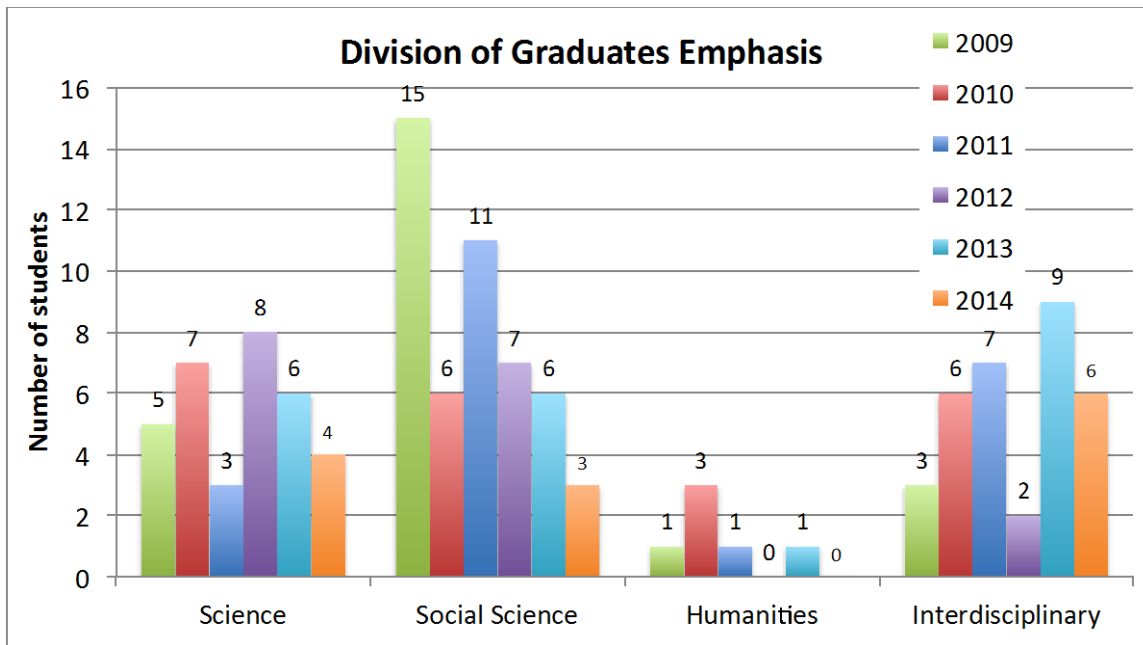


Figure 1 - Distribution of emphases among the major divisions

There were 13 graduates in the class of 2014 down from 22 in 2013. Of the 2014 graduates 7 had disciplinary emphases and 6 had interdisciplinary emphases (Figure 1). There had been a trend of more students choosing interdisciplinary emphases (Figure 2).

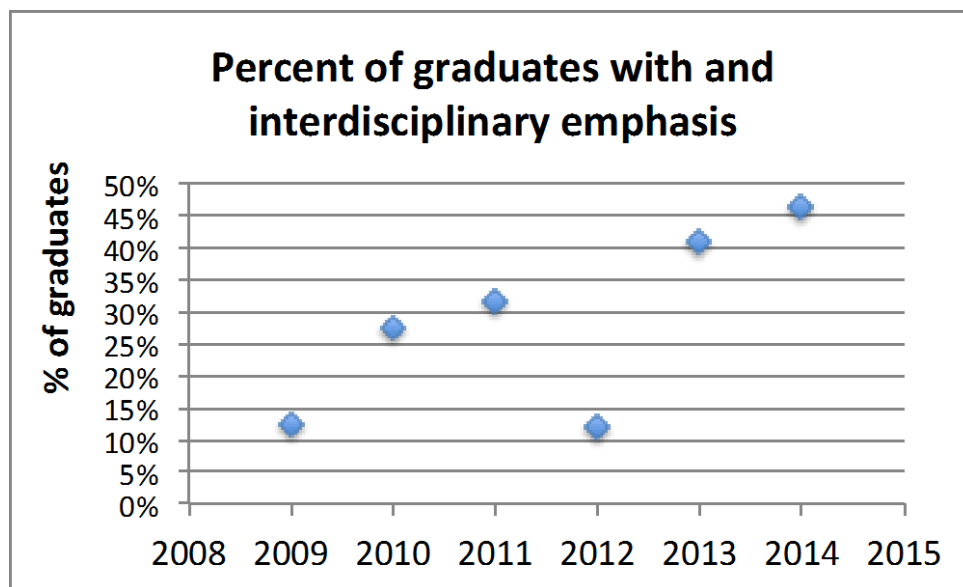


Figure 2 - Percent of graduates with and interdisciplinary emphasis

Of the 7 graduates with disciplinary emphases, they were almost equally divided between science and social science emphases. Overall we had 10 different emphases declared by our majors (Figure 3). Given there were only 11 graduates, this indicates an increasing “personalization” of the ES major through a variety of expanded interdisciplinary emphases. Given the small sample size of majors this year, we can’t draw any firm conclusions about this trend yet.

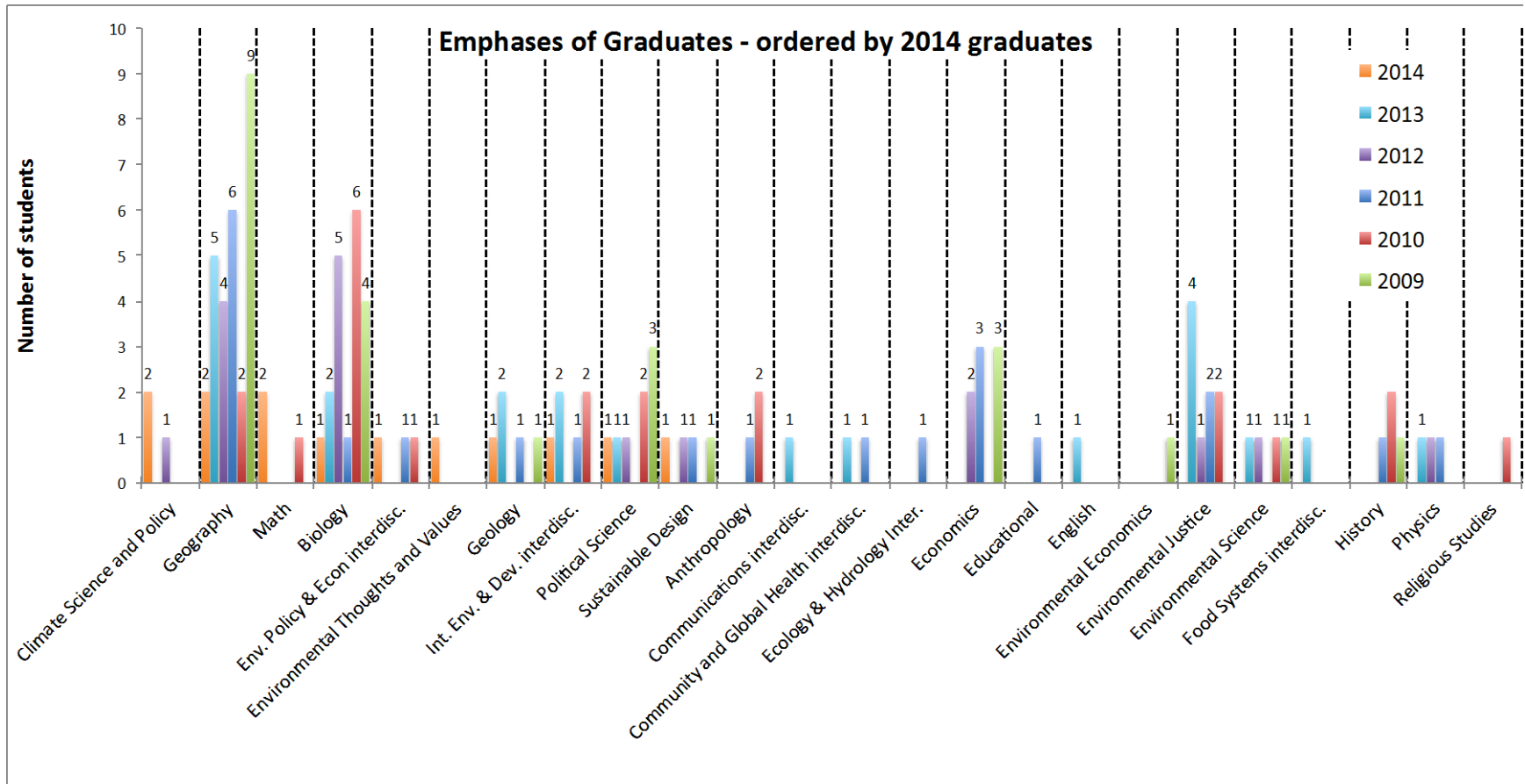


Figure 3 - Emphases declared by graduates

Summary of Responses to 2014 ES Graduates Survey

Introduction

The senior survey was distributed to all seniors via e-mail in March and April 2014. Students were asked to complete the survey using the Google Survey tool. We had an 85% return rate compared with 77% in 2013, 75% in 2012, 86% in 2011, 100% in 2010 and 67% in 2009.

Results

The survey results are presented in Appendix B. In addition to providing the 2014 student responses to the questionnaire, we discussed these results relative to results in earlier years. Figure 4 shows the ways in which student responses to the questionnaire have changed over time.

For most of the questions there was little change in the scores between 2014 and the past. There were 4 questions on which students on average ranked their response with a score <4. All of these improved from past values.

4. How confident are you that you could describe the major international policies related to these issues? (3.2 → 3.7) – This question has provided perennially low scores and we have tried to include more international content in our courses. We hope that with the addition of an urban environmental geographer with an emphasis on Asia may help some of our students in this area.

6. How confident are you that you could describe the current state of scientific evidence and major areas of scientific dispute regarding major environmental issues? (3.8 → 3.9) – We continue to work with our students in the introductory environmental science courses to address the evidence used to explore disputes.

19. How satisfied are you with the depth of your education in ES? (3.3 → 3.5) – It is interesting that while more of our students are choosing interdisciplinary emphases, there is improvement in students' perceptions of the depth of their education.

22. How well exposed were you to careers available with a professional interest in ES (NGO, government, industry or business)? (3.3 → 3.4) – We continue to be confused by the low responses to this question given the specific emphasis in the Environmental Leadership Practicum and Seminar on this issue.

There were also two questions for which there were substantial improvements shown.

13. How confident are you that you could develop a strategic plan to identify and implement local solutions to an environmental problem? (4.0 → 4.6) – Much of this might be attributed to changes in the Senior Seminar.

14. How confident are you that you could design an empirical study that tests or explores a basic scientific question important to environmental problem solving? (3.6 → 4.2) – We had been concerned about the low ranking of this question in the past and have made efforts in the introductory science courses to address this. We do find the

significant increase some what odd given poor score on #6 [How confident are you that you could describe the current state of scientific evidence and major areas of scientific dispute regarding major environmental issues? (3.8→3.9)]

We also asked students a series of open-ended questions:

23. What course(s) do you think the department should require all ES majors to take and why?

There was a range of suggestions from our graduates. A number basically indicated the current range of courses was good and a good number specifically mentioned the usefulness of Environmental Classics. Other areas that seemed to have some support were an economics course. These were very similar to responses from students last year. Since our major is quite large in terms of the number of courses, adding courses would require us to drop other required courses. We do not anticipate such a change at this time.

24. What currently offered course(s) do you WISH you had taken while majoring in ES and why?

Again, there were a large number of courses listed that students wished they could have taken. We consider this a good problem to have since students are not “running out” of courses to take.

25. What course(s) do you think are missing from our curriculum that you would like to see offered in the future and why?

Once again there were a wide range of suggestions, many consistent with past suggestions. Without additional staffing or strong commitments from other departments to consistently offer courses this will continue to be an issue.

26. What course(s) do you think should be dropped as required for the ES major and why?

There was some concern raised that the ES major is too large. Given the breadth of the “interdiscipline” we’re not sure where we would cut to make the major “smaller.” We are quite flexible in making sure majors can meet the requirements and counting courses from study-away. We will continue to monitor student responses to the size of the major.

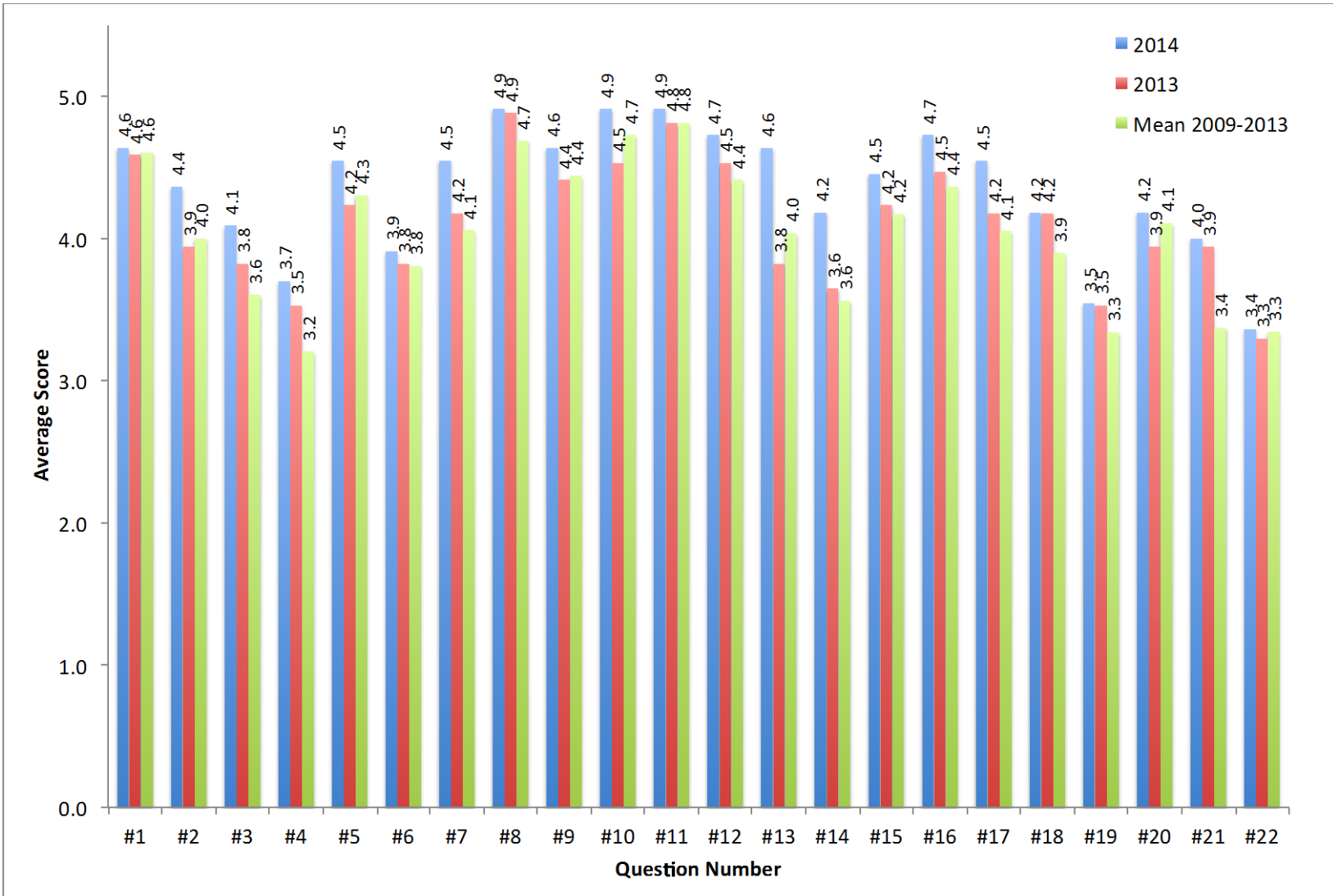


Figure 4 - Average student response to survey questions

Questions used in the senior survey

1. How confident are you that you could list the major environmental issues facing the world today?
2. How confident are you that you could describe the history of how these issues arose?
3. How confident are you that you could describe the major U.S. policies related to these issues?
4. How confident are you that you could describe the major international policies related to these issues?
5. How confident are you that you could describe issues of social justice related to these issues?
6. How confident are you that you could describe the current state of scientific evidence and major areas of scientific dispute regarding major environmental issues?
7. How confident are you that you could describe the canon of literature that defines the field of Environmental Studies?
8. How confident are you that you could gather information about specific environmental issues?
9. How confident are you that you could evaluate the quality of the information you have gathered?
10. How confident are you that you could connect your learning in ES to other areas of study?
11. How confident are you that you could think in an interdisciplinary manner?
12. How confident are you that you could help a group achieve a desired outcome in a collaborative project?
13. How confident are you that you could develop a strategic plan to identify and implement local solutions to an environmental problem?
14. How confident are you that you could design an empirical study that tests or explores a basic scientific question important to environmental problem solving?
15. How confident are you that you could deliver an effective presentation at a conference?
16. How confident are you that you could work effectively in an organization, government agency, or business dealing with environmental issues?
17. How confident are you that you could make a case for your acceptance to a graduate program to advance your education?
18. How satisfied are you with the breadth of your education in ES?
19. How satisfied are you with the depth of your education in ES?
20. How well exposed were you to the different disciplines of ES (humanities, science, social science)?
21. How well exposed were you to careers available to people with an academic interest in ES (masters or doctorate)?
22. How well exposed were you to careers available with a professional interest in ES (NGO, government, industry or business)?

Environmental Studies Senior Outcomes Summary - 2014

Introduction

As part of the Environmental Studies Department annual assessment program, we used the outcomes assessment found below to measure the progress our majors made during the course of their education at Macalester. As part of our Assessment Plan development, we decided to have each student's adviser initially fill out the outcomes assessment form, and then we had all faculty in the department meet to discuss these forms.

Results

Figure 5 shows the results of our ranking of students' mastery of outcomes based on the rubrics detailed in the outcomes assessment form (Appendix C).

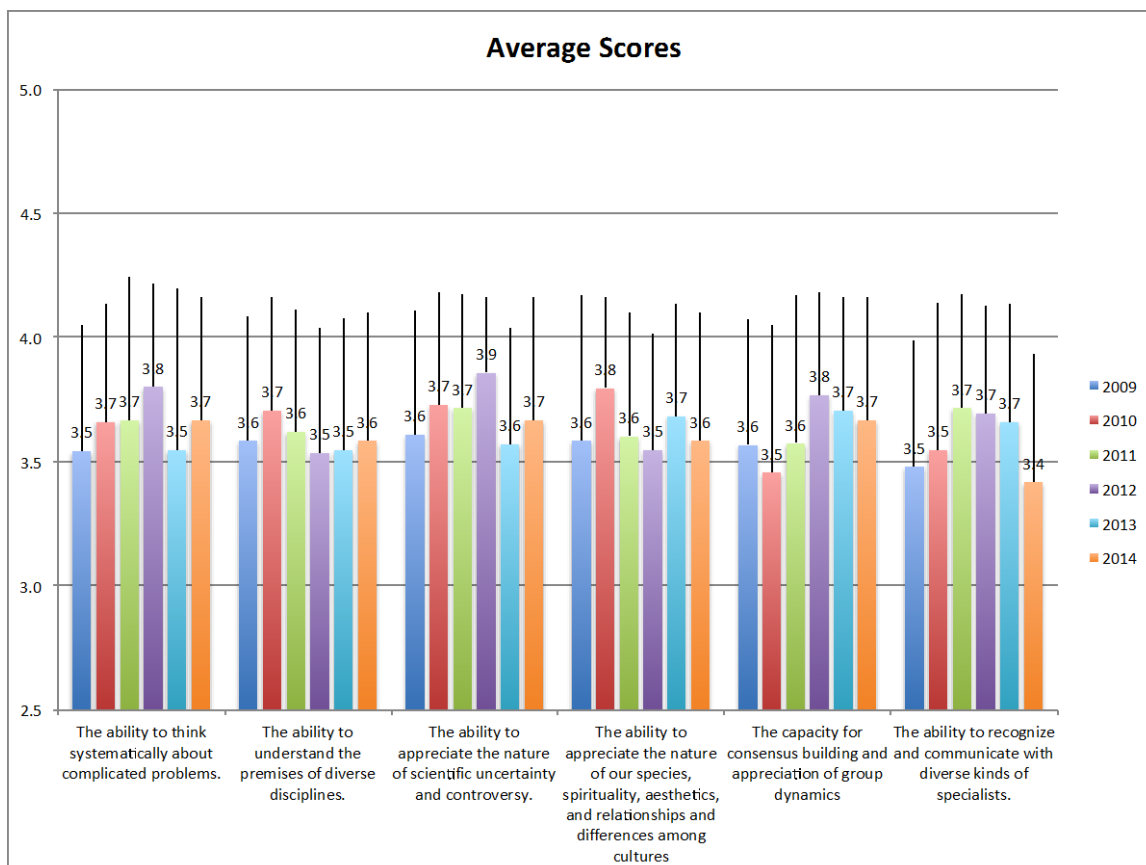


Figure 5 -Senior Outcomes Assessment – Comparing 2009, 2010, 2011, 2012, 2013 and 2014. Bars are one standard deviation.

As in the past, the ES Department was quite pleased with the mastery of our graduates. We found the average mastery to be quite high in all areas. We found ourselves being somewhat conservative in rating students at the highest level of mastery, retaining that rating for the more exceptional students. For most outcomes our 2014 ratings were

consistent with earlier ratings. There was some concern raised about the decline in the ranking for students on achieving goal #6 – The ability to recognize and communicate with diverse kinds of specialists. Again given the rather modest sample size this year, we have decided we will watch to see if this is a trend or just an anomaly.

We continue to discuss the results of this assessment and our ability to accurately score our students in these areas. The department came to a consensus in 2013 that these categories should be retained for assessing our students in the future, but that these are more “goals” rather than “outcomes.” We have yet to develop specific outcomes based on these goals but hope to develop rubrics to score these outcomes during 2014-2015. Again, it is our plan that once this is completed we will have these outcomes assessed in a different fashion than we have in the past (i.e. all assessments completed by the faculty advisor). Instead goals 1 and 2 (The Ability to Think Systematically ... and The Ability to Understand the Premises ..) will continue to be assessed by advisors, while Goal 3 (The Ability to Appreciate the Nature of Scientific ...) will be assessed by faculty teaching the introductory environmental science and the Science and Citizenship courses, Goal 4 (The Ability to Appreciate the Nature of Our Species ...) will be assessed in the Environmental Classics course, Goal 5 (The Capacity for Consensus Building ...) will be assessed in the Senior Seminar, and Goal 6 (The Ability to Recognize and Communicate ...) will be assessed in the Environmental Leadership Practicum and Seminar. Hopefully this change will allow us to better assess the actual outcomes of our students.

Appendix A.

Environmental Studies Department Assessment Plan Submitted by Roopali Phadke, Acting Chair February 1, 2014

I. Department Student Learning Statement

The mission of the Environmental Studies Department is to provide students with the opportunity to engage in learning opportunities that support their desire to understand and solve environmental problems. The solutions to many environmental issues require both deep disciplinary knowledge and an interdisciplinary breadth of understanding. Our curriculum emphasizes academic rigor, experiential learning and collaborative research and action projects.

II. Department Learning Goals and Outcomes

The Environmental Studies Department has developed the following learning goals for our students:

As an interdisciplinary program, the Environmental Studies program expects students to develop a holistic understanding of environmental issues occurring at the local, national, and global level. Students gain this understanding by using the tools and perspectives of the humanities, natural sciences, and social sciences to analyze the causes and consequences of environmental problems and the knowledge to develop solutions.

The Environmental Studies Department has developed the following learning outcomes for our students:

- The ability to think systematically about complicated problems.
- The ability to recognize and communicate with diverse kinds of specialists.
- The ability to understand the premises of diverse disciplines.
- The ability to appreciate the nature of scientific uncertainty and controversy.
- The capacity for consensus building and appreciation of group dynamics.
- The ability to appreciate the nature of our species, spirituality, aesthetics, and relationships and differences among cultures.

III. Department Assessment Strategies

We use two instruments to evaluate our learning outcomes each year: an online Senior Survey (required of every graduating major) and an individual student rubric for each Senior scored on a 5 point scale that is completed by all faculty in a consensus based assessment meeting.

The shortcoming of this system is that we are assessing students upon the completion of our major and using this as a tool for refining the content delivery and

scope of our courses. This does not allow us to examine student development through the learning goals at various stages through the major. The below plan describes additional tools we hope to implement to better assess learning outcomes.

IV. Four-Year Timeline to Implement Assessment Strategies

Environmental Studies faculty members meet annually to evaluate our students' ability to achieve our learning goals and outcomes. We will continue to use the instruments described above because they provide us with comparable data year after year. There are a number of ways we can continue to develop new assessment strategies. We document these below.

In 2013-14:

We will meet as usual in Spring 2014 to review senior surveys and learning outcome rubrics. Our individual rubric discussion of learning outcome relies on faculty who have worked most closely with a particular student to best evaluate their success at each outcome. In our Spring 2014 retreat, we will use the Biology department learning goals mapping tool as a model for our department. We will map each of our learning outcomes on to our current curriculum. This will draw our attention to the learning outcomes that need our curricular attention.

In 2014-15:

The National Council for Science and the Environment (NCSE) is developing a set of new learning goals in 2014 that apply to Environmental Studies and Sciences. We will review their learning outcomes and assessment report in 2014-2015 and consider changes we may implement in the following year.

We will also aim to tie student performance to our learning outcomes more closely now that we have mapped out our curriculum in terms of specific learning outcomes.

In 2015-16:

We will implement any changes to our curriculum based on our review of the NCSE document. This may call for changes in our assessment processes in 2015-16.

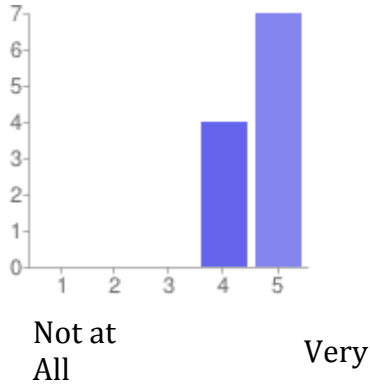
In 2016-2017

We are up for departmental external review in 2016-2017. We will prepare for that review by conducting an extensive alumni survey in the Summer 2016. We will survey alumni using the same questions in the Senior Survey. Clearly, this will provide important information for our self-study and will impact future assessment discussions.

Appendix B. Summary of Responses to 2014 ES Graduates Survey

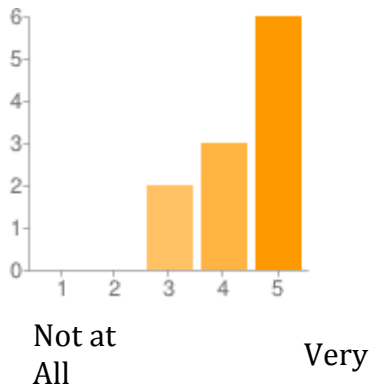
11 responses

1. How confident are you that you could list the major environmental issues facing the world today?



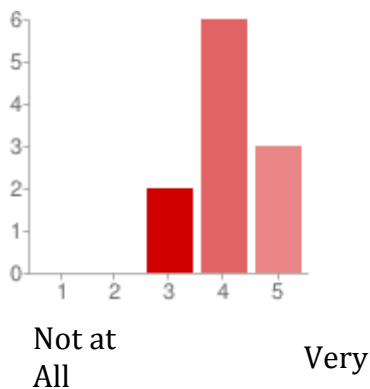
1 - Not at All	0	0%
2	0	0%
3	0	0%
4	4	36%
5 - Very	7	64%

2. How confident are you that you could describe the history of how these issues arose?



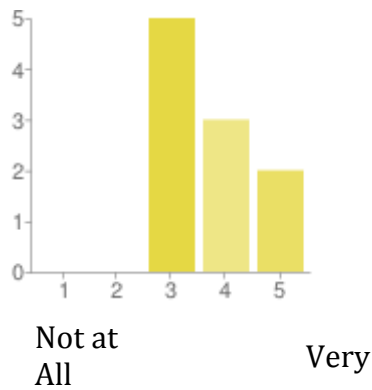
1 - Not at All	0	0%
2	0	0%
3	2	18%
4	3	27%
5 - Very	6	55%

3. How confident are you that you could describe the major U.S. policies related to these issues?



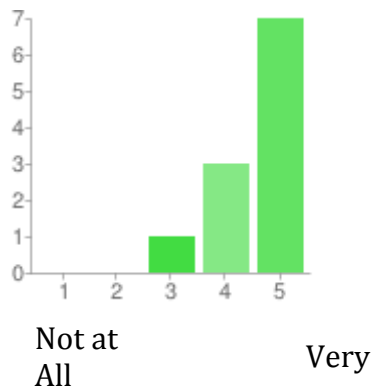
1 - Not at All	0	0%
2	0	0%
3	2	18%
4	6	55%
5 - Very	3	27%

4. How confident are you that you could describe the major international policies related to these issues?



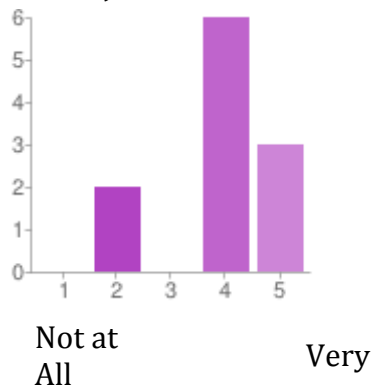
1 - Not at All	0	0%
2	0	0%
3	5	50%
4	3	30%
5 - Very	2	20%

5. How confident are you that you could describe issues of social justice related to these issues?



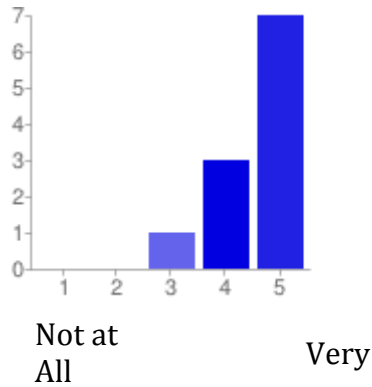
1 - Not at All	0	0%
2	0	0%
3	1	9%
4	3	27%
5 - Very	7	64%

6. How confident are you that you could describe the current state of scientific evidence and major areas of scientific dispute regarding these major environmental issues?



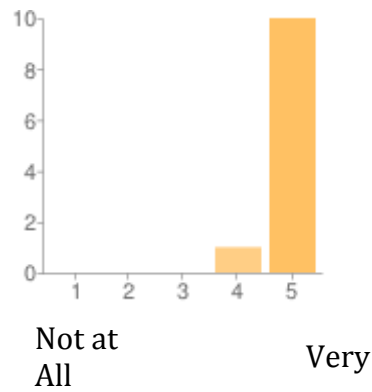
1 - Not at All	0	0%
2	2	18%
3	0	0%
4	6	55%
5 - Very	3	27%

7. How confident are you that you could describe the canon of literature that defines the field of Environmental Studies?



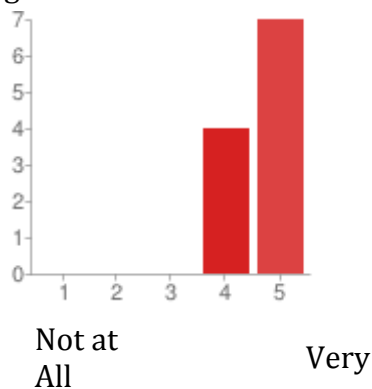
1 - Not at All	0	0%
2	0	0%
3	1	9%
4	3	27%
5 - Very	7	64%

8. How confident are you that you could gather information about specific environmental issues?



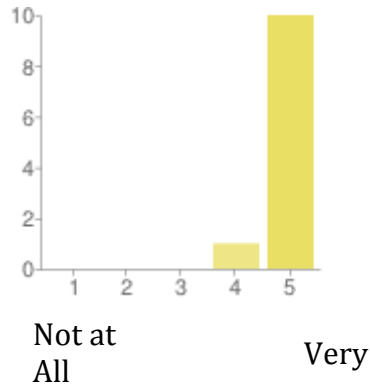
1 - Not at All	0	0%
2	0	0%
3	0	0%
4	1	9%
5 - Very	10	91%

9. How confident are you that you could evaluate the quality of the information you have gathered?



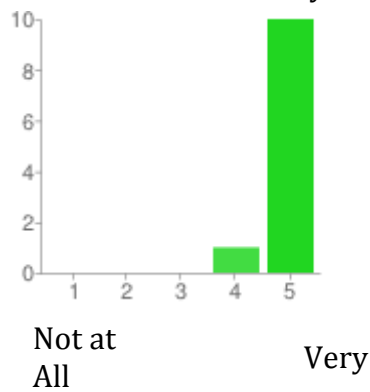
1 - Not at All	0	0%
2	0	0%
3	0	0%
4	4	36%
5 - Very	7	64%

10. How confident are you that you could connect your learning in ES to other areas of study?



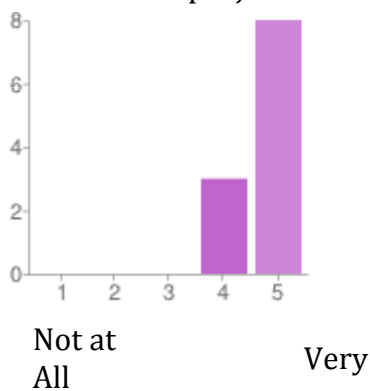
1 -	Not at All	0	0%
2		0	0%
3		0	0%
4		1	9%
5 -	Very	10	91%

11. How confident are you that you could think in an interdisciplinary manner?



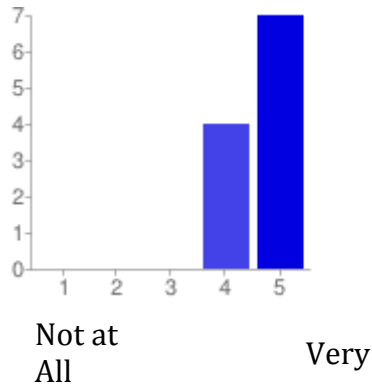
1 -	Not at All	0	0%
2		0	0%
3		0	0%
4		1	9%
5 -	Very	10	91%

12. How confident are you that you could help a group achieve a desired outcome in a collaborative project?



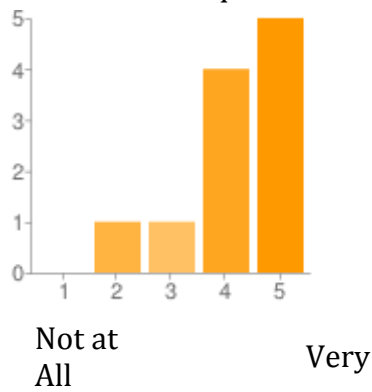
1 -	Not at All	0	0%
2		0	0%
3		0	0%
4		3	27%
5 -	Very	8	73%

13. How confident are you that you could develop a strategic plan to identify and implement local solutions to an environmental problem?



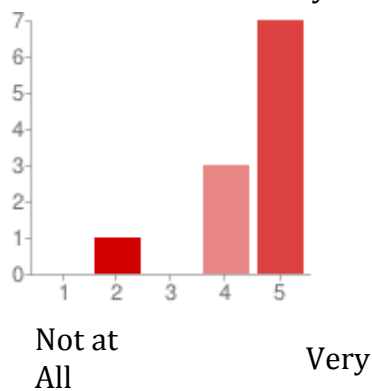
1 - Not at All	0	0%
2	0	0%
3	0	0%
4	4	36%
5 - Very	7	64%

14. How confident are you that you could design an empirical study that tests or explores a basic scientific question important to environmental problem solving?



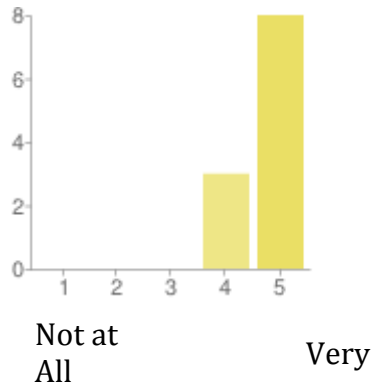
1 - Not at All	0	0%
2	1	9%
3	1	9%
4	4	36%
5 - Very	5	45%

15. How confident are you that you could deliver an effective presentation at a conference?



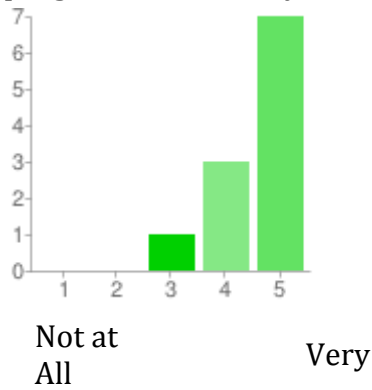
1 - Not at All	0	0%
2	1	9%
3	0	0%
4	3	27%
5 - Very	7	64%

16. How confident are you that you could work effectively in an organization, government agency, or business dealing with environmental issues?



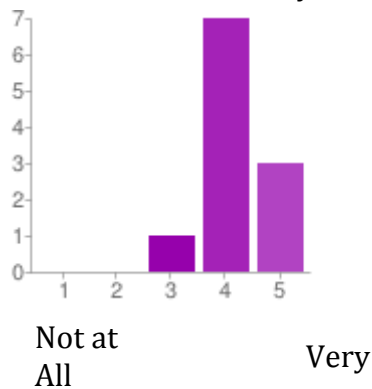
1 - Not at All	0	0%
2	0	0%
3	0	0%
4	3	27%
5 - Very	8	73%

17. How confident are you that you could make a case for your acceptance to a graduate program to advance your education?



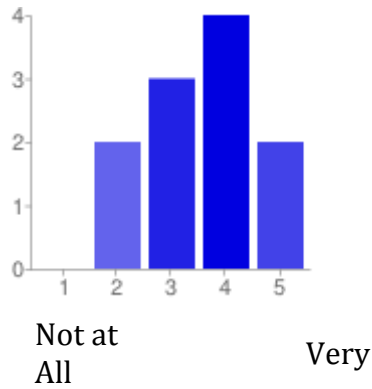
1 - Not at All	0	0%
2	0	0%
3	1	9%
4	3	27%
5 - Very	7	64%

18. How satisfied are you with the breadth of your education in ES?



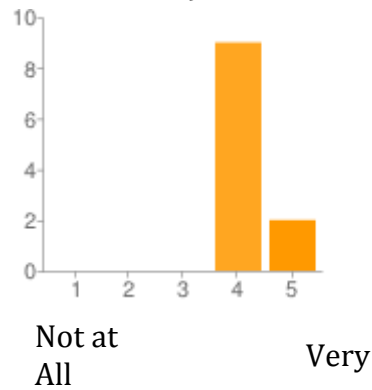
1 - Not at All	0	0%
2	0	0%
3	1	9%
4	7	64%
5 - Very	3	27%

19. How satisfied are you with the depth of your education in ES?



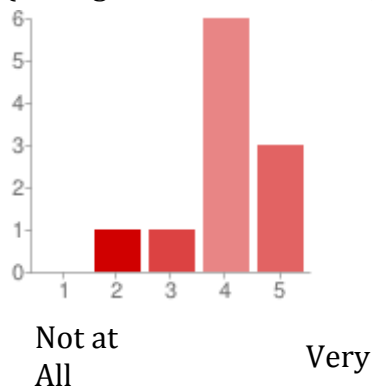
1 - Not at All	0	0%
2	2	18%
3	3	27%
4	4	36%
5 - Very	2	18%

20. How well exposed were you to the different disciplines of ES (humanities, science, social science)?



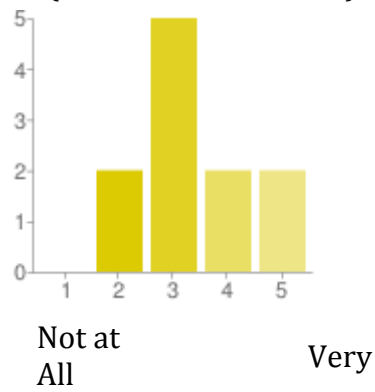
1 - Not at All	0	0%
2	0	0%
3	0	0%
4	9	82%
5 - Very	2	18%

21. How well exposed were you to careers available with a professional interest in ES (NGO, government, industry or business)?



1 - Not at All	0	0%
2	1	9%
3	1	9%
4	6	55%
5 - Very	3	27%

22. How well exposed were you to careers available to people with an academic interest in ES (masters or doctorate)?



1 -	Not at All	0	0%
2		2	18%
3		5	45%
4		2	18%
5 -	Very	2	18%

23. What course(s) do you think the department should require all ES majors to take and why?

Classics is a great course that not only introduced me to literature that shaped the environmental movement but also helped me to build a connection with other ES students. I would say everyone should take Environmental Politics and Policy as well.

The current requirements are fine but an expansion of possible concentrations for econ or art should be considered.

Environmental Classics, Environmental Politics and Policy, Environmental Science, ELP, and Senior Seminar

Environmental Justice: I think it is just as important as other required courses (such as Policy, History and Classics), and it brings to light the social consequences of environmental topics discussed in many other classes. It's a very important course especially in context with Macalester's values and mission.

I think the three intro courses provide a critical foundation for understanding environmental issues today, and should continue to be required. The other required course, I have mixed feeling about. These course are really good at building community in the department, but many students of my classmates have felt they were a waste of time.

Psyc of Sustainable Behavior: Easily the best course I took at Macalester, also it is SO crucial to understand how people perceive the ES issues we're working on, as well as what barriers are preventing them from changing their behavior.

Economics-- I believe it is necessary for all students to have a basic understanding of economic principles, whether or not you accept them as a reasonable basis for arguments. It's crucial for understanding how others see the world and form their arguments.

The three intro required courses do a great job of introducing students to a variety of environmental topics from a range of different perspectives. I think Envi. History and Envi. Politics and Policy are especially effective in setting the tone for the rest of the classes in the major. Climate Systems/Climate and Society provide a more scientific approach that I think can get lost in the major depending on what emphasis a student chooses.

Environmental Classics for sure as well. That was my favorite class as an ES major. The readings were great, gave me a strong background on relevant literature that framed the environmental movement, and I felt like many of my beliefs and perspectives were challenged. It also is great a building community in the major as well.

Intro Economics, Intro Mathematics Courses, and Intro Chemistry, because these are basic knowledge in a wide span of fields and necessary to forming your own well-informed opinions on a variety of environmental subjects. While environmental majors have the opportunity to understand issues from interdisciplinary perspectives, I feel our perspective can often lack the practical understanding of a field to be well-informed or propose feasible suggestions.

24. What currently offered course(s) do you WISH you had taken while majoring in ES and why?

Ecology and more science-based classes

Environmental Economics (next year), Psychology of Sustainable Behavior

Basically all of them. Environmental Justice, Psychology of Sustainable Behavior, Environmental Justice, Environmental Economics, Climate and Society

I didn't have enough time to take upper level ES classes. I especially wish I would have been able to take Imperial Nature, Car Country, and Sustainable Development & Global Future.

I wish I had had a chance to take more natural science courses (eg. botany, ecology or maybe some geology) to have a stronger foundation in the natural sciences. I took one non lab science course and felt that I could have used my time better digging deeper into the issues through a higher level course/or another lab based course from another department.

I would have also liked to have taken environmental economics or econ of global food problems, both of which, I believe would have added another critical dimension to my understanding of environmental issues.

Outdoor ed: I think it would have been good to get more experience/knowledge with how to connect people to things I've always (inherently) been passionate about.

Some climate science class-- simply to know the scientific side of ES better

I would have liked to have taken more environmental history courses. It only worked out for me to take Envi. History with Ryan Edgington which was a great class. I really loved putting environmental issues into a historical context. Unfortunately it seemed as though many ES classes were scheduled at the same time each semester.

I wish I could have taken Science of Renewable and Botany and Ecology. A stronger science perspective would have been valuable especially post-graduation. I sometimes feel as though I lack the concrete research and science background that Biology or Chemistry majors have. I feel like this might put me at a disadvantage when looking for jobs.

The psych and sustainability course

Those classes listed above, because I feel I forgot, or at least didn't gain much ground in any of these important principles of science. Many of these fields take years of practice to become proficient, and each class of those fields is a building block towards that proficiency, that I wish I had maintained.

25. What course(s) do you think are missing from our curriculum that you would like to see offered in the future and why?

A class on renewable energy systems that covers technical knowledge about production and consumption of energy as well as the politics of implementing such systems.

I'd like to see more advanced level course on environmental policy

I am excited to hear that there is an art and environment class in the works; I think this will add a new and exciting way to approach environmental studies. More cross listed courses with American studies, sociology, and some of natural sciences might be a nice addition.

Something with Business and Sustainability, criticisms of environmentalism/environmental movement, alternative models to capitalism-- New Economics

GIS. I was able to fit GIS into my schedule for two semesters and thanks to flexibility within the department I was able to also take Urban GIS. Even though GIS might belong more in the Geography department I think it's an invaluable software that is immensely important today. Having some background in it goes a long way when applying to just about any job in the Environmental field.

Maybe as we go towards junior and senior year, in the practicum course perhaps, have more alumnae come or be able to connect more with what life after Mac would be

would like to see more statistics based environmental classes, or classes within the Enviro Studies department that are focused on the methods of scientific research (rather than methods courses outside of the department). I think these are really important if the Macalester Enviro Studies department is to have any unique angle compared to other colleges' enviro studies departments, because it would provide knowledge on a often confusing but useful set of skills.

26. What course(s) do you think should be dropped as required for the ES major and why?

Nothing that I have taken.

None that I can think of

The Leadership Pract/Sem had a few useful exercises (especially meeting with alumni and mock interviews), but I'm not sure they were unique enough to experiences offered generally at Macalester (such as with the Internship or Career Development offices). Regardless of the Leadership course I would have had internships with very similar experiences. I would have liked to be able to take another class in place of the Seminar.

I think that environmental classics should be reworked. While I thinking all the readings are important, I remember be frustrated by the class structure, finding the games, discussion, and activities not very useful in furthering my understanding of the environmental canon.

Maybe drop one of the Natural/Social Science or Humanities courses? Make it two out of three? I really enjoyed everything I took in ES, but it is quite a lengthy major!

I can't think of any specific required classes that should be dropped but I do think the major is too large. I understand wanting to give students both the depth and breadth required for a concrete ES major but I think the size can scare students away especially if they don't decide on ES until their sophomore year. The emphasis does allow for students to explore other subject areas but I felt sometimes as though I was trapped taking only ES courses and ES required courses in other departments which can be a bit stifling.

I think the amount of writing and reading based classes is excessive--although these skills are very important, and I have enjoyed each of these classes in their own right, the sum of these classes is too great. The environmental major seems to me to be excessively large, and often overlaps greatly from semester to semester. I do not want to name specific classes to be dropped--I've liked each I've taken, and I don't want to see the department getting smaller rather than larger. But I think the department should be more willing to let students take non-ES classes for credit, given that these classes are not in place of a small core of ES classes, and that they provide a valuable perspective and application of an environmental lens.

Appendix C. Learning Objectives

Student Name _____

Learning Objectives	Level 1	Level 2	Level 3	Level 4	Level Achieved
The ability to think systematically about complicated problems. (based on written work and presentations)	Treats related ideas or data as unrelated, or draws weak or simplistic connections	Begins to establish connections and perceive implications of the material	Brings together related data or ideals in productive ways, thoroughly discusses implications of material	Develops insightful connections and patterns that require intellectual creativity	
The ability to understand the premises of diverse disciplines. (based on written work and presentations)	No connections to other disciplines.	Limited or forced connections to other disciplines.	Explores connections to other disciplines.	Meaningful and effective connections to other disciplines.	
The ability to appreciate the nature of scientific uncertainty and controversy. (based on written work and presentations)	Doesn't acknowledge that there is uncertainty or controversy.	Simply reports what one side or the other says with no discussion.	Acknowledges differing points of view within the scientific community, but overlooks or misrepresents some important points of view.	Is aware of and acknowledges differing points of view within the scientific community, and uses reasoned arguments to explain why he or she has adopted a particular view.	
The ability to appreciate the nature of our species, spirituality, aesthetics, and relationships and differences among cultures (based on written work and presentations)	Does not recognize the impact of human nature, spirituality, aesthetics and cultural knowledge and is unable to formulate clearly contextual analysis.	Recognizes the impact of human nature, spirituality, aesthetics and cultural knowledge but is unable to formulate a clear contextual analysis.	Recognizes the impact of human nature, spirituality, aesthetics and cultural knowledge and explains it using contextual analysis.	Recognizes the impact of human nature, spirituality, aesthetics and cultural knowledge and explains it using contextual analysis that addresses the relationship among different contexts.	

Learning Objectives	Level 1	Level 2	Level 3	Level 4	Level Achieved
The capacity for consensus building and appreciation of group dynamics (based on group work)	All group members have different perspectives and are not willing to listen to those of the other group members. Bickering and miscommunication frequently occur.	Some members' perspectives are heard more frequently than others. No attempt is made to draw out the opinions and viewpoints of more "silent" group members.	All members are comfortable and satisfied with the means of making project decisions. However, not all members have a voice in the way those decisions are made.	All members are comfortable and satisfied with the means of making project decisions. All group members have a voice in decisions, whether they are finally made by the consensus of the group as a whole, or a leader or subcommittee. Decisions are made rapidly and efficiently.	
The ability to recognize and communicate with diverse kinds of specialists. (based on group work)	Several of the group members demonstrate an inability to work or communicate with others of differing knowledge and abilities. The members' work reflects apathy or callousness towards the feelings of others. As a result, group cooperation breaks down.	Some of the group members have difficulty adjusting communications to accommodate persons of diverse knowledge and sensitivities. Members do little to encourage respect in others for individual differences.	Most of the group members show the ability to communicate with persons of diverse knowledge and sensitivities. Each member respects the feelings of others.	Group members demonstrate insight concerning the feelings and levels of knowledge of the other members and exhibit this insight while communicating. Each respects individual differences and sensitivities of the others.	

Some rubric language provided by David Blaney, Political Science Dept. Macalester College.

Aesthetic and spirituality rubric derived from <http://www.mdc.edu/learningoutcomes/documents/Group4Rubric.pdf>.

Scientific uncertainty and controversy rubric derived from <http://uteach.utexas.edu/ResearchMethods/CourseRubric.pdf>.

Group dynamic rubrics derived from http://dhc.ucdavis.edu/faculty/seminarfaculty/rubrics/Group_Dynamics_Rubric.doc