ENVIRONMENTAL STUDIES ASSESSMENT REPORT – 2010

Submitted by Dan Hornbach, Chair – May 2010

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.

We have attached separate summaries of the transcript analysis, senior survey and outcomes assessment conducted during 2010. Since this was the second year of the implementation of our assessment plan we are starting to develop a longitudinal database which should help us in our assessment process. The department discussed the outcomes of each of these tasks and conducted a mini-retreat on May 5, 2010. During this retreat we made decisions regarding individual courses we teach and our overall department curriculum.

We brought copies of our course syllabi in order to gain a better understanding of what we teach in our courses in order to build upon knowledge that students have gained in other courses and to insure that there is not too much overlap in the readings that our students examine.

In addition we made significant changes to our requirements for the major including:

1. Requiring all 3 Intro classes
2. Requiring ENVI 490 Leadership Seminar
3. Letting students know we prefer ENVI 489 (Environmental Leadership Practicum) over ENVI 624 (Internship)
4. Requiring ONE each Science, Soc. Science and Humanities course (from a reduced list of more focused environmentally related courses).

We believe that these changes in our curriculum will provide significant improvements for our students. In addition we are developing a 3-5 year teaching plan which should help us insure breadth, depth and continuity in the courses that are available to our students.

As mentioned in our Departmental Assessment Plan we will review our Mission Statement and Learning Objective in the self-study preceding our next Departmental Review.

APPENDIX I. TRANSCRIPT SUMMARY FOR 2010 ENVIRONMENTAL STUDIES GRADUATES

As part of the Environmental Studies Department annual assessment program, we undertook an analysis of the transcripts of the 22 2010 ES graduates. For each student the Registrar's office provided a list of all courses taken by the individual. Dan Hornbach, Chair of ES, analyzed these data and the results (below) were discussed by the ES Department on April 19, 2010. A summary of the analysis and discussion is presented below.

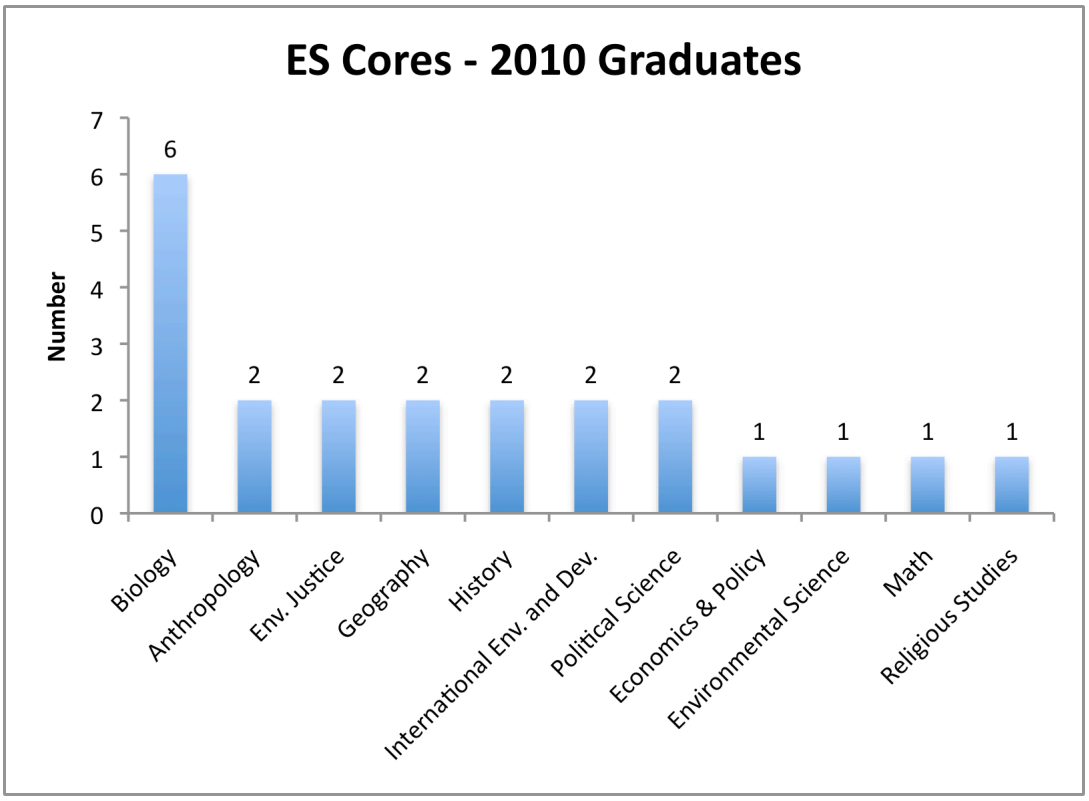


Figure 1. Number of students choosing various cores in ES.

Figure 1 shows the distribution of cores chosen by the 2010 graduates. Our major requires that student choose a core in order to gain depth in some area within Environmental Studies. The most popular core this year was Biology. Last year we had 4 Biology cores, but had 9 Geography cores. We were somewhat surprised by the decline in Geography cores. This could be a one-time shift, but we will closely monitor these numbers. Of the graduates 8 were disciplinary cores in the sciences, 6 in the social sciences and 3 in the humanities. This compares to 6, 15 and 1 in the sciences, social sciences and humanities in 2009 (with 24 graduates). In this year's class we had twice as many students take advantage of our interdisciplinary cores (6 versus 3). We just recently developed specific requirements for these interdisciplinary cores, so we expect more students to take advantage of these options in the future. Thus it appears we are getting a

more diverse group of students in the ES major with a more balanced number of science and social science students. We are still low in the number of humanities students and this is probably reflective of the small number of faculty from the humanities with expertise in the environment.

Figure 2 shows the range of classes taken by the 2010 graduates. The most common courses taken by ES majors include our required Environmental Classics (ENVI280) and Environmental Practicum (ENVI489) courses. Also many students took American Environmental History (ENVI 234) as one of their two required introductory courses. Interestingly ENVI 133 (Environmental Science) was one of the most popular introductory ES courses in 2009 but with more graduates choosing a science core, fewer took this course as one of their two introductory courses. It was somewhat disappointing that only half of our graduates took ENVI 215 Environmental Policy and Politics. This course is generally full and thus a substantial number of non-ES majors are taking the course, however, we'd like to see a larger number of ES majors taking it. The department has begun to discuss the role of all of the introductory courses in the major and will continue to do so during the upcoming year.

Fifty-five percent (55%) of our students studied away during their time at Macalester down from 67% in 2009. This shows in a number of "SA" courses. There were a fairly large number of topics courses (194/294) taken by our majors, showing that we have added a number of courses that will eventually show up in the "regular" course list.

Like 2009, about half of our student took Intro to Economics (ECON 119) and about a third took the Applied Calculus course (MATH 135). In 2009 about 73% of our students took GIS and this was reduced to 27% in 2010, partly due to the decline in Geography cores. In 2009 only 42% of our students had taken a statistics course (Math 153/155) and that increased to 64% in 2010. Overall, with the number of students taking Intro. to Economics, Math and/or GIS we believe our students are getting good quantitative training.

Figure 2 shows ENVI 180 (Ecology) with 7 students. There were also 3 enrolled in this course as BIOL180 – so the total enrollment in this course is 10. This is down from 19 2009 graduates taking this course, which is odd given the increase in the proportion of ES Bio cores. Only 27% of our students took an ethics course (PHIL 125 or 229) in 2010 compared with about 50% in 2009. Ethics was required in our earlier major and we discussed this issue last year. Apparently we need to do more to encourage students to take an ethics course. We did however have 45% of our students take the Environmental Justice course (ENVI 237) and we will need to work hard to staff this course in the future.

Finally, it is clear that our students are broadly educated liberal arts students. Many students have taken Spanish or French and a number have taken English, music, art, and physical education.

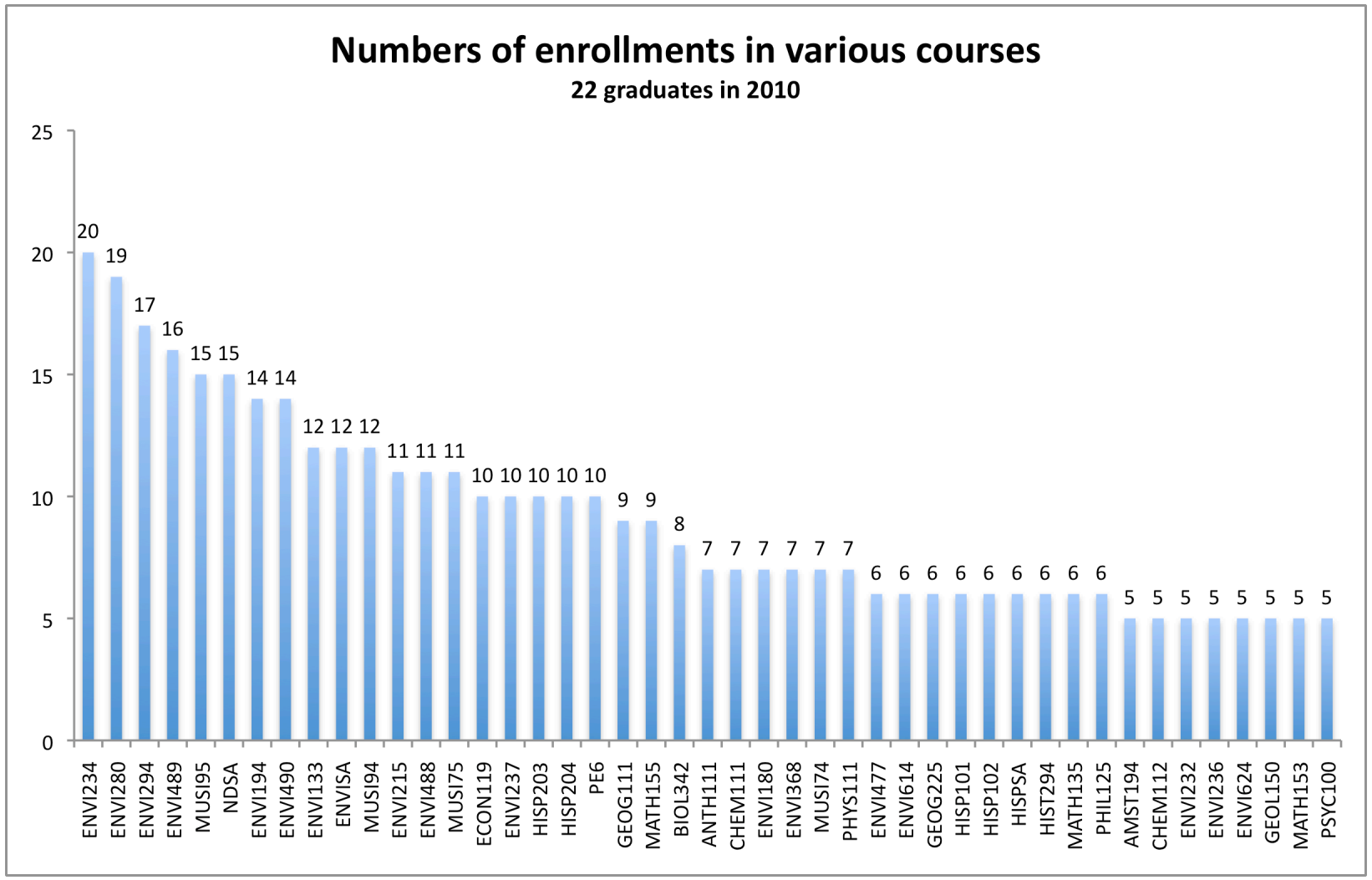


Figure 2. Number of course enrollments. NDSA – Non-divisional Study Away. Course titles are given in Table 1.

Table 1. Course titles.

Number	Title
AMST194	An Intro to Latina/o Studies
ANTH111	Cultural Anthropology
CHEM111	General Chemistry I
CHEM112	General Chemistry II
ECON119	Principles of Economics
ENVI133	Environmental Science
ENVI180	Ecology
ENVI194	Global Envir. Hist (1); Renew. Energy (6); Climate Change (3); Restoration Ecol. (2); Lakes, Streams, Rivers (1); Cult., Conserv, Envir. (1)
ENVI215	Environmental Politics/Policy
ENVI232	People and the Environment
ENVI234	American Environmental History
ENVI236	Consumer Nation
ENVI237	Environmental Justice
ENVI280	Environmental Classics
ENVI294	Conservation Psych. (3); Consumer Nation (1); Environ. Media (5); Poetry Environ. (1); Psyc of Sustainable Behavior (3)
ENVI477	Comp Environment/Development
ENVI488	Senior Seminar
ENVI489	Environmental Leadership Pract
ENVI490	Envi St Leadership Seminar
ENVI624	Internship
ENVISA	Human Persp on Dev/Environ
GEOG111	Human Geography of Global Issu
GEOG225	Intro to Geog Info Systems
GEOL150	Dynamic Earth and Global Chang
HISP101	Elementary Spanish I
HISP102	Elementary Spanish II
HISP203	Intermediate Spanish I
HISP204	Intermediate Spanish II
HISPSA	Intermediate Spanish II
HIST294	Relig/Race/Sex Early Amer Soc
MATH135	Applied Calculus
MATH153	Data Analysis and Statistics
MATH155	Intro to Statistical Modeling
MUSI74	Macalester Choir
MUSI75	Macalester Choir
MUSI94	African Percussion
MUSI95	Piano
NDSA	Internship/Seminar
PE6	Yoga I
PHIL125	Ethics
PHYS111	Contemporary Concepts
PSYC100	Introduction to Psychology

Figures 3 and 4 show that our majors take a large number of courses in the ES department. With the large number of cores in Biology, a large number of courses are taken in that department, although the number was similar to 2009 (51). The biggest difference from 2009 is the drop in Geography courses taken (from 87 to 43), again likely in response to the decline in the number of Geography cores. The other relatively large decline was in Geology courses from 29 in 2009 to 10 in 2010.

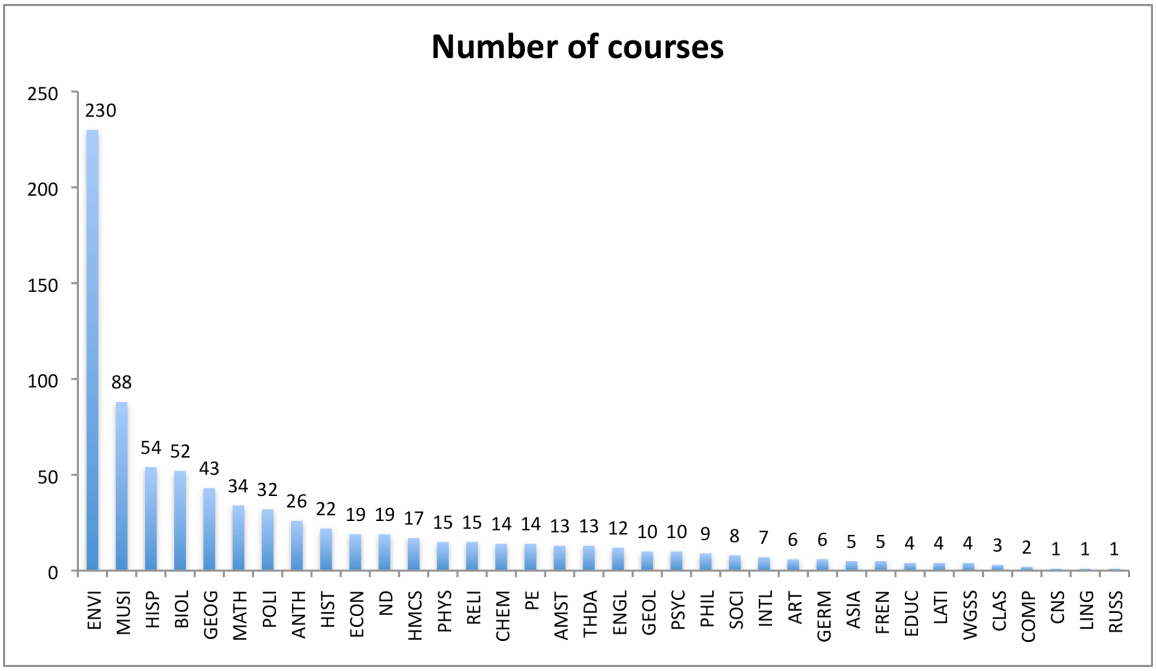


Figure 3. Number of courses taken per department.

As mentioned above, the ES students take courses in a wide variety of departments. Almost half of our students took courses in 11 departments (plus study away – Fig. 4). We already have close interactions with faculty in Geography, Biology, Economics, English, Geology, History, and Political Science. We should do more to encourage connections with Mathematics and we are had hoped that Philosophy would be searching for a new environmental philosopher with the movement of Karen Warren to the College's MSFEO program, we are uncertain of the future of this position.

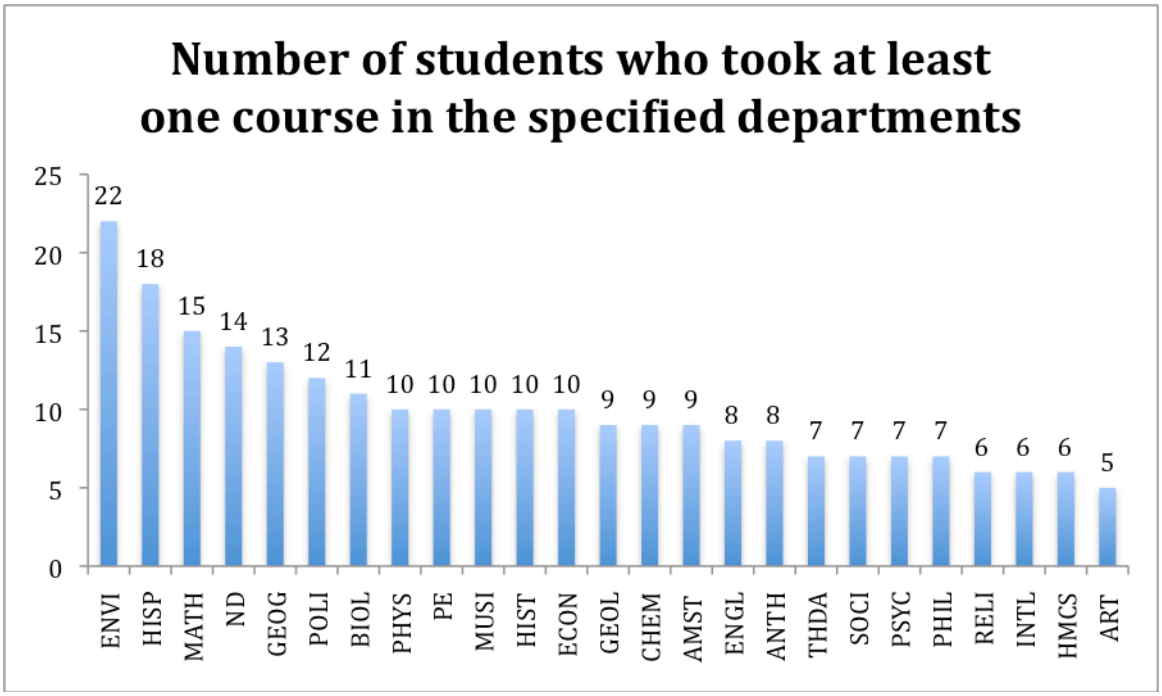


Figure 4. Number of students taking at least one class in various departments.

Since we have such a diverse major, we decided to look for patterns in the way students take courses at the College. We used cluster analysis to examine trends in how students with various cores take classes (Fig. 5). The first thing to notice (looking at the "tree" on the right) is that there are two major clusters –one that contains most of science-related cores (Biology and Math – with one historian included) and one that contained the rest of the cores. Within the larger, diverse cluster, one can see a sub-cluster with mainly social science cores (Political Science, Geography) and cores that have a large social science content (Economics & Policy and Env. Justice). In a discussion of these data we had an interactive graph where we could examine the specific courses taken and which students took those courses.

The first thing we noticed is that regardless of core, the distribution of students taking any individual course across these clusters is quite high showing that students are quite interdisciplinary in their choice of courses. As in 2009, we saw that science cores were more likely to take Statistical Modeling (MATH 155) rather than Introductory Statistics (MATH 154) than the social science cores. Also all of science cores took BIOL 342 Animal Ecology and Behavior, likely attesting to Prof. Davis' reputation. We also noted they were less likely to take an ethics course (PHIL 125 or 229).

Course distribution of various cores with language and PE courses removed.

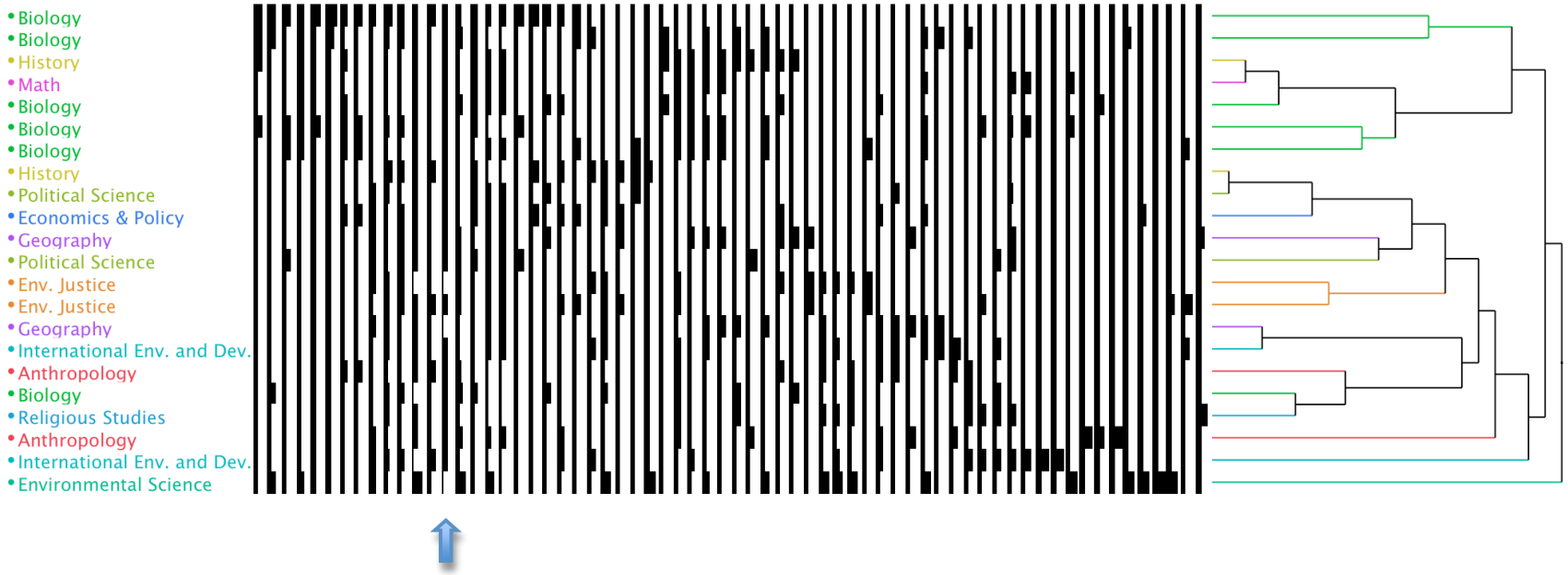


Figure 5. Cluster analysis of courses taken by 2010 ES graduates.

How to read this graph: Cores are found on the left. In the center, each column represents an individual course. Course numbers can be found in Table 2. The thick bar indicates than an individual student took the course. For example the black bar on the far left represents BIOL 165 while the black bar on the right refers to ENVI 477. Also the 14th column (shown with the arrow) shows that the vast majority of students took ENVI280 (Environmental Classics). On the right, the cluster "tree" shows how students are clustered together based on shared courses.

Table 2. The list of courses from Figure 5.

Right --->Left					
BIOL165	BIOL363	PHYS111	ENVI180	GEOG488	MATH155
BIOL394	CHEM111	ENVI215	GEOG242	ENVI489	BIOL194
BIOL342	CHEM112	ENVI335	INTL280	ENVI490	ENVI237
BIOL117	ENVI280	AMST294	RELI234	EDUCSA	PHYS622
BIOL180	ENVI488	MATH153	GEOL150	SOCI194	BIOL205
ENVI294	HIST194	SOCI110	ENVI624	PHIL136	GEOG232
GEOG111	ENVI194	PHIL125	ENVI232	ANTH111	ECON231
GEOG225	AMST194	PSYC100	ENGL120	ANTHSA	GEOG250
MATH135	MATH194	ENVI644	ENVISA	ANTH394	ENVI368
BIOL270	ENVI236	ENVI612	RELI294	POLI141	ENVI614
GEOL101	MATH137	ENVI133	ECON119	ENVI234	ENVI477

Summary of Responses to 2010 ES Graduates Survey

Introduction

The senior survey was distributed to all seniors via e-mail in March 2010. Students were asked to complete the survey using the Google Survey tool. We had a 100% return rate compared a 67% return rate in 2009. We attribute this to administering the survey earlier and persistence on the part of the faculty teaching the senior seminar and Ann Esson's great work at "reminding" students to fill out the survey. We discussed these surveys on May 3, 2010.

Results

The survey results are presented at the end of this document. In addition to providing the 2010 student responses to the questionnaire, we provide the corresponding data for 2009 to examine temporal changes in responses. Half of the questions (11) in 2010 had essentially the same average ranking as 2009 (within 0.2 units on a 5.0 scale), 8 had higher ratings and 3 had lower ratings. Last year we had pointed out 3 areas of concern based on the quantitative portion of the survey:

1. The lack of confidence that they could describe the major international policies related to the major environmental issues (Question #4). The ratings from 2010 graduates were even lower, reinforcing our need to improve our attention to international environmental issues.
2. The lack of confidence that they could design an empirical study that tests or explores a basic scientific question important to environmental problem solving (Question #14). For this area 2010 students were more confident than 2009 students, although the distribution was bimodal. We suspect that this may be related to the differences between students with a science core and those without a science core. We plan to discuss the science requirements for the major and we will insure that at least one of the science courses includes an explicit exercise related to the design of an empirical study.
3. In 2009 students didn't feel as if they were exposed to career advice from either academics or practitioners of Environmental Studies (Questions #21 and 22). The 2010 students felt less exposed to advice from academics while they felt more exposed to advice from practitioners. Since these students began in the major, Dr. Phadke has developed a speaker series in the ES Seminar associated with the Practicum course. She has been bringing "practitioners" to the class and will bring more academics to the course next year. In addition, not all of our students take the Practicum course and its associated Seminar course, instead taking an Internship. We plan to change our requirements so that all students must take the Seminar course regardless of whether they take the Practicum course or an Internship. This should help to assure that all of our majors are exposed to career advice from both practitioners and academics.

In Question #18 and 19 we asked students whether they were satisfied with the breadth and depth of their major. Most students were satisfied with the breadth of their program but they were less

satisfied with the depth. In next year's survey we will ask students whether they have a disciplinary or interdisciplinary core which should allow us to ascertain whether students with a disciplinary core feel they have greater depth in their major as compared to those with and interdisciplinary core.

When asked about which additional courses should be required for the major (Question #23), the answers were relatively scattered. As in 2009, the most common responses were Environmental Justice and Economics.

When asked which course they wished they had taken while an ES major (Question #24), again the answers were scattered and seemed to be idiosyncratic.

When asked what course(s) do you think are missing from our curriculum that you would like to see offered in the future (Question #25), again the answers were varied. Of particular interest were the comments that suggested we try to find ways to have courses build upon one another which reinforces the relatively low ranking in Questions 19 asking students about their satisfaction with the depth of their educational experience.

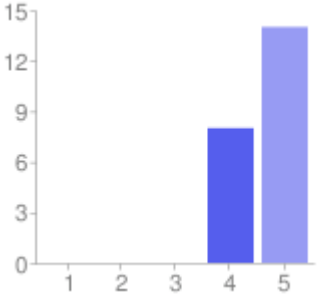
When asked what courses should be dropped from the curriculum (Question #26) a number of students felt there were significant issues with the Environmental Classics course. Most of the students believed the course was somewhat redundant in its readings and many suggested that it be taken earlier in a student's program of study. It was always our intention that this course be a sophomore level course and we will make efforts to advise students to take this course early in their career. We will hold a majors' fair in the fall for new students to the College to help them better plan their courses in ES even if they haven't yet declared an ES major. There were also a number of other individual suggestions for curriculum revision.

Finally, when asked if they had additional comments (Question #27) a number of students shared their thoughts. A number commented on the quality of service provided by visiting professor Stephanie Rutherford. We couldn't agree more with those sentiments and Stephanie's moving on will be a great loss to the department. A couple of students suggested that we have essentially two majors – an Environmental Science and an Environmental Studies major. This is a common model at many colleges and universities but does not fit with the interdisciplinary focus of our major. We were saddened to see the comments from two students who were clearly not satisfied with their experience as ES majors, citing a lack of community and concern by their advisers. We believe that some of the dissatisfaction with the major could be a response to the sabbaticals of Chris Wells and Roopali Phadke and the fact that the department just reached full staffing this year. Also there was some misconception by students that the College "decided" not to keep Stephanie Rutherford on. As Stephanie and others in the department explained many times, her's was always meant to be a visiting position. While we would love to keep Stephanie on, she has expressed her thanks for the great experience she's had at Macalester.

We also realized through our discussions that we need to de a better job explaining to our majors *why* we have the curricular structure we have. We plan to develop materials for the website and handouts that provide this rationale. We are also considering asking students to "apply" to major in ES. Their application would include a brief statement outlining their goals in the major. This

would help us better advise students and would enhance their understanding of the major requirements.

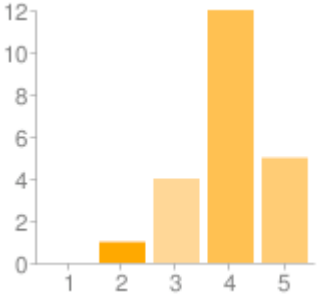
1. How confident are you that you could list the major environmental issues facing the world today?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	8	36%	37%
5 - Very	14	64%	63%
Average		4.67	4.63

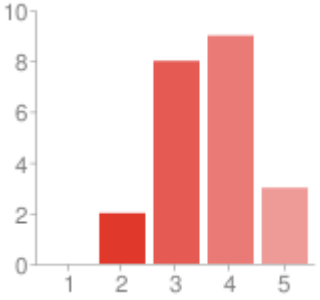
2. How confident are you that you could describe the history of how these issues arose?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	1	5%	0%
3	4	18%	25%
4	12	55%	50%
5 - Very	5	23%	25%
Average		4.00	4.00

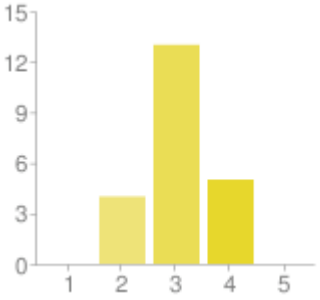
3. How confident are you that you could describe the major U.S. policies related to these issues?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	2	9%	0%
3	8	36%	38%
4	9	41%	50%
5 - Very	3	14%	12%
Average		3.62	3.75

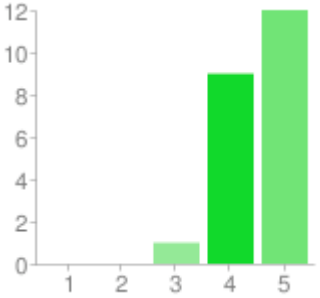
4. How confident are you that you could describe the major international policies related to these issues?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	4	18%	12%
3	13	59%	44%
4	5	23%	38%
5 - Very	0	0%	6%
Average		3.10	3.38

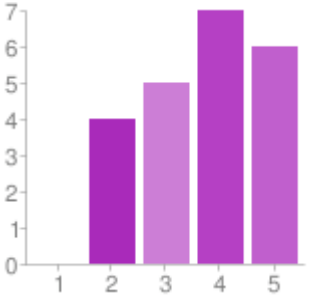
5. How confident are you that you could describe issues of social justice related to these issues?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	1	5%	31%
4	9	41%	25%
5 - Very	12	55%	44%
Average		4.52	4.13

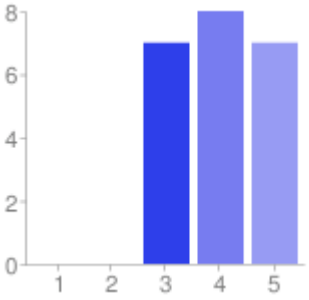
6. How confident are you that you could describe the current state of scientific evidence and major areas of scientific dispute regarding major environmental issues?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	4	18%	0%
3	5	23%	25%
4	7	32%	50%
5 - Very	6	27%	25%
Average		3.76	4.00

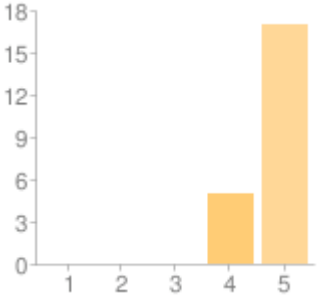
7. How confident are you that you could describe the canon of literature that defines the field of Environmental Studies?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	7%
3	7	32%	27%
4	8	36%	33%
5 - Very	7	32%	33%
Average		4.00	3.93

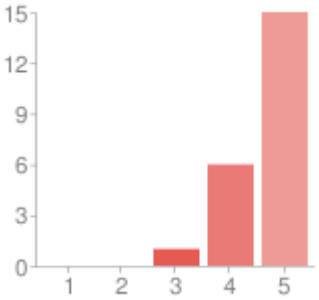
8. How confident are you that you could gather information about specific environmental issues?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	5	23%	40%
5 - Very	17	77%	60%
Average		4.81	4.60

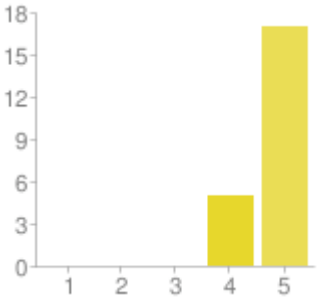
9. How confident are you that you could evaluate the quality of the information you have gathered?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	1	5%	7%
4	6	27%	53%
5 - Very	15	68%	40%
Average		4.67	4.33

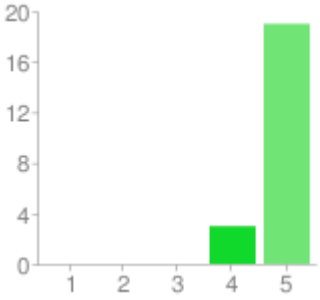
10. How confident are you that you could connect your learning in ES to other areas of study?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	5	23%	27%
5 - Very	17	77%	73%
Average		4.76	4.73

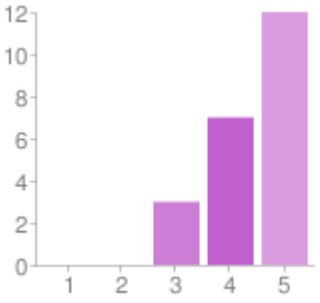
11. How confident are you that you could think in an interdisciplinary manner?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	3	14%	27%
5 - Very	19	86%	73%
Average		4.86	4.73

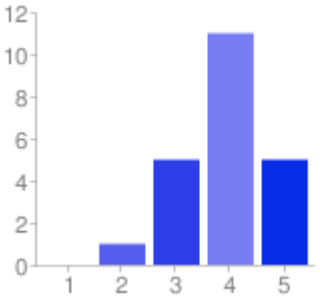
12. How confident are you that you could help a group achieve a desired outcome in a collaborative project?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	3	14%	13%
4	7	32%	53%
5 - Very	12	55%	33%
Average		4.43	4.20

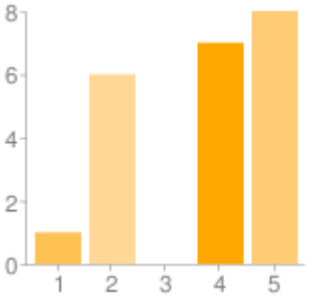
13. How confident are you that you could develop a strategic plan to identify and implement local solutions to an environmental problem?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	1	5%	7%
3	5	23%	7%
4	11	50%	60%
5 - Very	5	23%	27%
Average		3.95	4.07

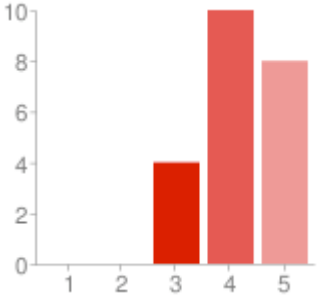
14. How confident are you that you could design an empirical study that tests or explores a basic scientific question important to environmental problem solving?



Not at All Very

		2010	2009
1 - Not at All	1	5%	0%
2	6	27%	20%
3	0	0%	27%
4	7	32%	33%
5 - Very	8	36%	20%
Average		3.76	3.53

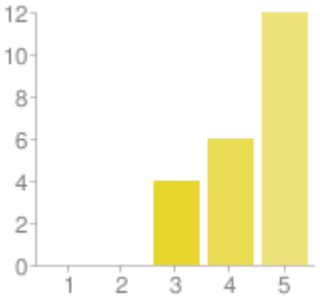
15. How confident are you that you could deliver an effective presentation at a conference?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	4	18%	43%
4	10	45%	14%
5 - Very	8	36%	43%
Average		4.19	4.00

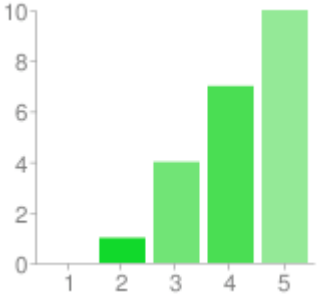
16. How confident are you that you could work effectively in an organization, government agency, or business dealing with environmental issues?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	4	18%	7%
4	6	27%	47%
5 - Very	12	55%	47%
Average		4.38	4.40

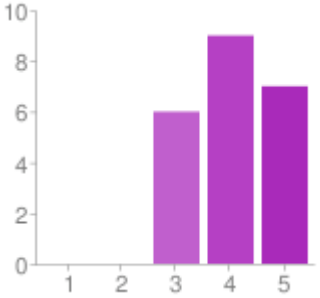
17. How confident are you that you could make a case for your acceptance to a graduate program to advance your education?



Not at All Very

		2010	2009
1 - Not at All	0	0%	
2	1	5%	7%
3	4	18%	27%
4	7	32%	40%
5 - Very	10	45%	27%
Average		4.19	3.87

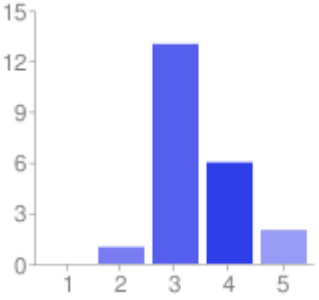
18. How satisfied are you with the breadth of your education in ES?



Not at All Very

		2010	2009
1 - Not at All	0	0%	6%
2	0	0%	25%
3	6	27%	31%
4	9	41%	31%
5 - Very	7	32%	6%
Average		4.10	3.06

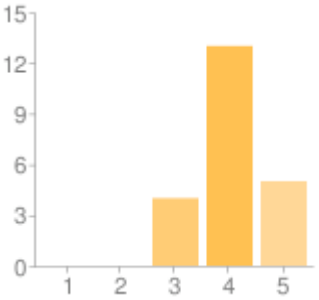
19. How satisfied are you with the depth of your education in ES?



Not at All Very

		2010	2009
1 - Not at All	0	0%	6%
2	1	5%	31%
3	13	59%	38%
4	6	27%	19%
5 - Very	2	9%	6%
		3.43	2.88

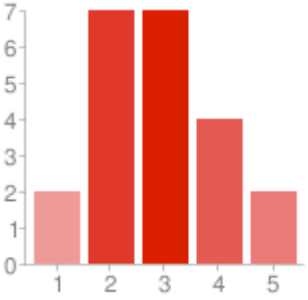
20. How well exposed were you to the different disciplines of ES (humanities, science, social science)?



Not at All Very

		2010	2009
1 - Not at All	0	0%	0%
2	0	0%	0%
3	4	18%	0%
4	13	59%	87%
5 - Very	5	23%	13%
Average		4.05	4.13

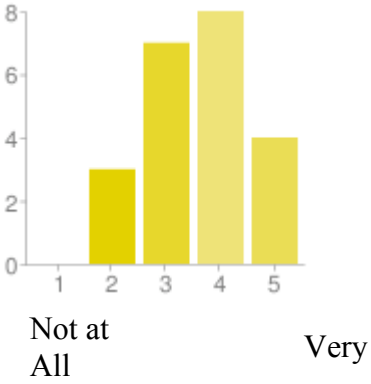
21. How well exposed were you to careers available to people with an academic interest in ES (masters or doctorate)?



Not at All Very

		2010	2009
1 - Not at All	2	9%	0%
2	7	32%	31%
3	7	32%	37%
4	4	18%	19%
5 - Very	2	9%	13%
Average		2.81	3.13

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



		2010	2009
1 - Not at All	0	0%	0%
2	3	14%	12%
3	7	32%	44%
4	8	36%	31%
5 - Very	4	18%	13%
Average		3.57	3.44

23. What course(s) do you think the department should require all ES majors to take and why?
environmental justice and citizen science are my two favorite classes I took at macaleseter. Both are opportunities for people from any of the ES foci (humanities, socsci, science) to learn about the ways in which race and nature have been developed in society and through science, social science, and history. I do not know whether they should be required, but they are certainly fantastic candidates.
Environmental Economics and Policy: In just about every class that talks about social justice and environmental issues, the class consensus ends up being that future possibilities are constrained by "capitalism" or "market forces", yet very few of these students have actually studied how markets operate, or how precisely economists think about the environment, and so the conversation stays quite superficial. It would be beneficial to classroom discussions and each major's future career if they had at least a cursory background in economics.
Environmental Justice! It made us confront a lot of the assumptions I had about environmentalism. It provided a reality check about the history of our discipline and prepares us in a very profound way to be more responsible, aware, and effective leaders for environmental change.
Not many. I think there should be alternatives to the basic level courses for students who are more advances. I think the Enviro Leadership Practicum is VERY important, and think a focus on collaborative projects/ more of the consulting role could be even better. I'm not sure I would require all students to take Environmental Justice, but I think it should be a strongly recommended course for all ES majors, I think it is also VERY important that this class be cross-listed with American Studies.
Environmental Justice
I think the requirements that we currently have are good.
-American Environmental History -a course that has the word "social justice" in the description
I'm not sure if the department needs to require all majors take any specific courses. I think that I more support students choosing a certain number of courses from a select group of core classes (choose 3 of 5 which are considered important, for example).
Statistics and economics (principles or enviro). Both are key to understanding the more empirical elements of the field, as well as counter arguments.
US Environmental History - sets ground for a lot of other courses Biology/ecology 101 - Important scientific foundation US Env Policy and Politics - shows up everyday in media and is very relevant to today
I think all three, Environmental Science, Environmental Politics & Policy, and American Environmental History should be required, because I think they set the foundation for all ES majors regardless what you ending up focusing on. I also think the Internship and Environmental Classics should stay as required courses.
American Env. Politics, Env. Politics and Policy, Env. Science, Senior Sem, Env. Classics, Internship

A separate Envt. Lit. class. Frequently the books are given very little skilled reading beyond the application to an issue. IE silent spring, while quality about pesticides, was barely considered as more than a prose textbook, or a lengthy article. Whitman, Edward Abbey, Thoreau, Muir... there's more there than "what environmental issues did the author address?" Ecology's systems approach is necessary, as is at least 2 Bio like cell/molec, physio, or genetics. There has been far more education done in the natural sciences academically, where the social science side seems like a deliberate ambiguation of any scientific purposes. Putting a human spin on it doesn't have to sink the science into subjectivity and speculation. (wow, that was a lot of "S") Perhaps a Human Environment class, specifically biological, ecological and social, would fit this otherwise awkward niche.
environment and the media. it made me look at environmental issues and how i view nature in a whole different way, one that was not looked at in others. also, people and the environment (or at least thats what it was called when i took it), it was just a very fun class.
I think the distribution requirements of the major (in humanities, natural sciences, and social sciences) are a good idea; however, the list of approved courses for these distribution requirements often seems arbitrary. I would like to see the department come up with a better rationale for why some courses are approved and some courses are not approved. It contradicts the interdisciplinary nature of ES to say that certain courses simply "do not contain environmental content," especially when the student knows this is not the case. For instance, biology courses with a focus on human health have not been approved for the distribution requirement, but intro-level chemistry and economics are approved - what is the "significant environmental content" of these courses? I do understand that it is a hassle to try to keep up with an ever-evolving list of new courses with environmental content. The only solution I can think of is to make more of an effort to tailor these requirements to individual students so that they follow a natural progression. This would provide the major with more depth and help avoid the problem of students taking too many intro-level courses.
I think that the major has a really nice range of options and permits majors to experiment and delve into issues that are important to them. I don't think that there are any additional courses that should be mandatory.
Environmental Econ (or at least Principles_. Too often I heard my fellow ES students discussing real world problems as though they existed in a theoretical vacuum. Like it or not, econ does drive the way our culture is organized. The better this is recognized and understood, the better we can deal with problems in a realistic framework.
Environmental Economics--I am just taking Principles in my last semester in part to better understand the perspectives economists arrive with when encountering environmental issues and I wish I could have been in Env. Econ as well. Considering the value our government and most citizens place on economic well-being I think the ideas of people who graduate with an ES degree would be further empowered and respected if we had at least a basic grasp of economic language and an understanding of how economics play into environmental issues and solutions.
I think the department should require that all ES majors take an Environmental Justice class. I feel that American Environmental History does expose majors to the history of environmental justice in the US, I think it is important to take a further step in requiring a more in depth, specific class about Environmental Justice to prepare graduates to enter the world of environmental studies in society fully prepared. I think the most pressing problems facing our local communities and the international community right now are issues that need to address the multiple connections between people and their environments. In order to truly make change in the world, environmental justice has to be a crucial consideration and students need to have the background and capacity to understand white privilege and power.

24. What currently offered course(s) do you WISH you had taken while majoring in ES and why?
I wish I had a chance to take american environmental history as an underclassman. The class was totally full when I tried to take it as a freshman and sophomore.
I wish that I had taken at least one ecology course, because so much of the discipline centers around ecosystems and thinking of other systems in terms of ecosystems.
oh man, i don't know. I took a lot of ES classes. Maybe environment and the media because Stephanie is the best.
Car Culture, Consumerism courses
Citizen Science - very good application of very applicable issues
Environmental Justice, Environmental Economics, Water and Power, Car Country
-Ecology, because I still don't know much about the local ecosystems here (prairie, oak savanah, pine forests, river/lake ecology) compared with the knowledge I gleaned growing up in the Northwest with an environmentally-oriented education and personal interest.
There are a lot of classes offered which sound very cool, but none that I wish I had taken instead of the ones I did.

Environmental Science/more science in general. As someone currently looking for jobs, many environment related jobs require knowledge in this field beyond what I have.
US Environmental History - sets ground for a lot of other courses, referred to a lot Another science course (like animal behavior or plant biology)
Science & Citizenship & Water & Power- because I think I would have gotten more of an idea of the policy behind alot of the scientific research I do. The Science of Renewable Energy, Environmental Justice, & Consumer Nation because those sound like really awesome classes Environmental Geology, The Earth's Climate System, Aquatic Ecology, Surface & Groundwater Hydrology because all of these relate to my senior honors thesis right now, and I wish I could have taken these classes for a little more background.
Env. Justice
Alternative Energy w. lab.... sounds like a real science class rather than paperwork about the principles involved. Generally, there's at least a few semester's worth of classes that i would like to take even still, just because they're there. Though to be fair, i'd take organic chemistry because it's interesting, if i could afford to. Water and Power looks fascinating.
water and power. i never got around to taking it and it sounds like something i would have loved. also i never had a class with that professor
I wish I had been able to take more of Chris Wells's courses (i.e. Imperial Nature, Urban Environmental History), but he was on sabbatical this year.
Environmental Justice, Environmental Economics: These are two major courses that I never had time to take that are very important and I feel that I missed out by not taking them.
More science. Most of the jobs in the environmental field I have found want more scientific ability and understanding than I have.
Ecology and (I think it is just called)--Animal Behavior I am really interested in ecosystems and wildlife
I wish I had taken Environmental Anthropology with Arjun Guteratne. I have heard that Arjun is an excellent professor, and I would have really appreciated learning an anthropological approach to environmental issues.

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 course on environmental social theory or philosophy would be cool. I do not know where this is headed now that karen warren is no longer here. An upper-level policy or law course would also be cool. Another thing that might be interesting is if faculty took turns teaching topics courses of their choice. I know designing a syllabus is difficult, but topics courses are fun! I would also be interested in an animal studies course.
An advanced level course in Environmental Economics. The current course is a nice overview, but it mostly remains at surface level because of math limitations.
hmmmmm i don't know, I think its pretty great now!
More courses on environmental innovation that integrate social change strategy and goals with concrete green development and community sustainability work. So kind of like Christie Manning's Psychology of Sustainable Behavior, except expanding beyond the personal to deal with systemic challenges of how we advance efficient communities, scalable clean-energy, sustainable food production, green industry, and smart design in actual communities (the Twin Cities are a great landscape for this). This is the ultimate in career development prep, and it is very hard to practically apply our work without it.
Environmental Health: a course that takes a 'critical epidemiology' framework and connects pollutants, contamination of air, water, etc to human AND environmental health. See, for example: Phil Brown's book entitled Contested Illness.
I would appreciate more natural science courses, especially at a higher level. The natural science classes for the ES major seem to be mostly 100-level with few to zero prerequisites (renewable energy, restoration ecology, environmental geology, lakes streams and rivers) except for a few upper-level biology/geology classes that seem to be more strongly associated with those departments than ES.
Can't think of any. Sorry.

Obviously I think climate, climate modeling and how it works, should become a part of the curriculum since global climate change is the one issue that connects all ES majors. A class looking more at conservation biology and its implications both for social justice concerns and mitigating climate change would be nice for ES majors focusing on biology and relevant social issues
More classes that build on each other such that students are required to not only take two natural science, social science, or humanities courses but that certain classes are required within those designations that build on the knowledge gained in an earlier version/class. I think this might help to keep students from taking too many classes that aren't reinforcing each other. Or at least have some sort of time table for when classes should be completed.
I would like to see something in the area of environmental education, (sounds redundant, a class on teaching environmental issues) because i feel this area is a catalytic one for growth of ES curriculum. Likewise, the actual field application of courses should be expanded beyond Ecology, Ordway is a massive asset that we barely grazed the potential of, as the logistics of transport undermined the time spent, since the facilities couldn't be used overnight or across a weekend instead. The whole history of natural sciences and philosophies is so dependent on lab science that any progress into HOW we came to think about certain things the ways we do, leading into their fields of study developing...is such cross-disciplinary treasure. Though vast, it would be nice to integrate a historical, developmental review of the origins of many disciplines in science, and specifically environmental science. Like those great turning point stories like Winchell's Fossilized Beaver dating St. Anthony falls' erosion upstream that cross carbon-dating, geology, human geography and economic impact of natural changes...despite the snickering over "beaver dating" that always happens.
n/a
I don't think there are necessarily courses missing from the curriculum, but I would like to see the ES department put more thought into the structuring of the interdisciplinary cores. There seems to be a misunderstanding between faculty and students about the intent of these cores. Many of the cores have names that refer to very specific fields of study that have particular methods of inquiry (i.e. Environmental Justice), which means faculty are reluctant to make substitutions for what has been approved. However, students tend to think more broadly about the relevance and connections that can be made within these themes. My question is, are these cores intended to introduce students to a variety of perspectives on an environmental theme? If so, the current strict policy about making substitutions to the preapproved list does not convey this intent. I would also like to see faculty provide more guidance to students when deciding which methods course fits best with the interdisciplinary cores, because the preapproved methods courses do not necessarily offer skills that students will have the opportunity to apply in other ES courses or projects (perhaps the problem is that students are not given adequate opportunities to do independent research).
Something a bit more action focused and optimistic; I found many of my ES classes to be depressing and disheartening, and I think a class that could have a major impact in the community or a collaborative project with an organization would have been more helpful
None come to mind.
An international environmental perspectives class--it could involve reading articles and books portraying the reactions and research behind environment issues from the eyes of other countries.

26. What course(s) do you think should be dropped as required for the ES major and why?
I am not a big fan of environmental classics. At the very least, I think it should be an introductory course rather than level 270. I had already read many of the books before taking the class, and it seemed sort of easy and redundant.
Environmental Classics: this course seems like the ugly duckling of the department. It has potential to be quite useful, yet just about everyone I know has not enjoyed it. I think that part of the problem is that it's intended for someone entering the department early on in their academic careers, while a lot of people don't declare a major until the spring of their sophomore year. Also, the reading list changes dramatically from semester to semester depending on the professor, which undermines the notion of a specifically defined "canon" of literature that we're all supposed to have covered as majors. At a minimum, it seems there should be some standardization across syllabi, but I would recommend having a higher-level course that can replace it if someone comes to the department later on in their time at Macalester.
Environmental Science I think the six-course "core" should be allowed to be interdisciplinary (I did this and it was excellent, but more recent ES majors have not been able to)
I think if you've read most of the books in Environmental Classics already (and can prove either written or orally that you understand their main points and importance), you shouldn't have to take it.

I understand the reasoning behind Environmental Classics, the practicum, and the senior seminar, and I can see the argument for requiring so many courses for majors only (though I'm not sure if I personally agree with it), but I think that all three could use some retooling. I think that the greatest strengths of the ES department are the breadth of interdisciplinary coursework one can take for the major and the wide variety of perspectives and interests found in the students of the department. The three required classes for the major seemed to cater to a specific subset of ES majors (interested in the social sciences, plans to work for an environmental non-profit...) at the expense of the whole body of students. I do think that all of the majors are at least somewhat served by the focus of these classes, but it would be great if the majors could be more fully served, or their perspectives broadened, by the sequence of requirements.
I believe the required courses all deserve to be required.
I think the 2 Natural science, 2 social science, 2 history courses should be dropped to one, and the 3 introductory courses: American Enviro. History, Enviro Politics & Policy, and Enviro. Science should ALL be required.
Courses, specifically, have changed in the time since, but the senior seminar i had for ES was one of the least relevant courses i have ever taken. Including even typing, in high school. If there is to be a requirement, the course that fills it should do so with something of value to the degree, and if it is to be cumulative across a major, this material should be drawn together from many areas. I would be willing to guess that this important capstone type of class has developed a lot since then, as the rest of the department has grown noticeably.
the senior seminar. its not very informative and i feel trapped in what i am able to do. the class time does not matter, we should just have to write a paper or do a project, rather then having a class
I am not sure if it should be dropped completely, but I recommend restructuring the Environmental Classics course. I took it with Terry Krier in the fall of my senior year, and it was an "easy A" course, but I don't feel that it contributed significantly to my knowledge of environmental thought. I had already read or been exposed to more than half of the works we covered. Many of the other seniors and juniors in the class also expressed frustration with the course content. One idea that came up when we were filling out course evaluations is that the department could have a lower-level Environmental Classics option for first-years and sophomores, and a higher-level option for students who declare their majors later or have already taken a lot of ES courses.
No specific courses, but the total number required when you consider focus requirements in addition to regular requirements is quite a lot.

27. Do you have any additional comments you would like to share?
The ES major is huge - 14-16 classes. While the core allows some flexibility, it seems like some departments are left out of the disciplinary core option (eg american studies, wgss, hmcs) should be allowed/encouraged.
The department is clearly growing. I understand that there are institutional constraints to how quickly staff can be added, but I would encourage the department to not use the complexity of the major plan to limit the number of majors. This is a field which is growing in importance, and should become one of the more popular at Macalester. The department needs to grow along with that demand.
the es professors are AWESOME. Stephanie and Chris and Christie and Roopali really made my Mac experience and I'm so grateful to them!
Thanks!
I think the Senior Seminar should not be taught by untenured faculty and new staff. While I appreciate the philosophy of the class, I know many people avoid taking it at all costs in order to avoid what they've heard from other students is a disorganized and frustrating experience. Also, Stephanie Rutherford should stay! Keep her here! She's one of the best professors (if not the best) that I've had my entire time at Macalester.
I think that the senior seminar should be reworked so that each person can do their own project that is related to their core. This would be much more valuable than a group capstone project.
I am really disappointed that Environmental Justice is not being offered. I know that is due to Prof. Rutherford leaving without a replacement, but with SO many students clamoring to take it (and its growing importance within the future of the environmental movement), I think it is a huge shame.
As an ES major who focused in a science related field, I think it was essential to my learning experience that I did a research fellowship. I would suggest the ES faculty to encourage more frequently ES students who are more interested in the hard science to look for research opportunities over their sophomore and junior summer breaks.

Consider distinguishing Environmental Science from Environmental Studies. The social "half" of a major is nice as a study, but i would prefer to see a 3/4 - 1/4 split even for an Env. Sciences major. Many of the courses which stand in multiple departments are amazing, and i would like to see more of them. Env. Geography is a natural association, perhaps add Env Geology, Env. Education, or Env. History or Env. Literature... Getting as far out as Env. Art, Env. Philosophy, Env. Computing, or Env. Psychology would be groundbreaking. All in all, good job, Mac! Now, to save the world!
In recent conversations with fellow ES majors, we've realized that our principle disappointment with the department stems from our sense that the department doesn't value us. I personally had to fight with the department to complete my major and have felt resistance rather than support throughout negotiations. I have felt that my adviser takes little interest in my classes and academic experience, and the one professor I have felt closest to and most supported by - Stephanie Rutherford - is being let go by the department after this year. I feel that the department as a whole and individual professors therein could improve by taking a position more of advocacy for students, rather than what I feel to be a position of management. It was disappointing to be at the senior lunch last week, and to feel so little connection to the people who have done so much to facilitate my academic growth. I have truly felt not only marginal within the department, but in fact adversarial and unwanted throughout my 4 years. Without Stephanie I would have dropped the major a long time ago, and it makes me sad to think about the department without her next year. Finally, it's disappointing to think of my 4 years with ES as being nothing more than fine. I feel like I've settled for an experience that was alright, but unexceptional - something I never expected when applying to and beginning my years at Macalester.
Thank you!
I think it would be neat to have an Environmental Science degree offered. I also think one of the E.S core classes should be natural science based--like ecology maybe?
As an inter-disciplinary major, I realize how hard it is to create cohesion and continuity in the ES department. But these aspects lacking really disappointed me and dissatisfied me with the ES major. I feel like it is a very disjointed and fragmented department, and this is reflected in student's experiences. Our senior class experience was especially difficult, I think, because both Roopali and Chris Wells took their sabbaticals, leaving a void in the department which contributed to my feeling unsupported and embraced by the faculty. I hope that in the future the department can develop a close-knit, supportive and friendly faculty communtiy while maintaining it's inter-disciplinary focus.

Environmental Studies Senior Outcomes Summary - 2010

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

Not all of the Environmental Studies graduates have advisers that are members of the ES Department. Since a number of our students are double majors (their second major often being in the area of their ES Core) they often have faculty member from that department as their adviser. Usually these advisers teach cross-listed courses in ES and are members of the ES supporting faculty. Some of these advisers felt uncomfortable providing these data and thus members of the department provided rankings in areas where they had the most knowledge concern a student's mastery of an outcome.

Figure 1 shows the results of our ranking of students' mastery of outcomes based on the rubrics detailed in the outcomes assessment form.

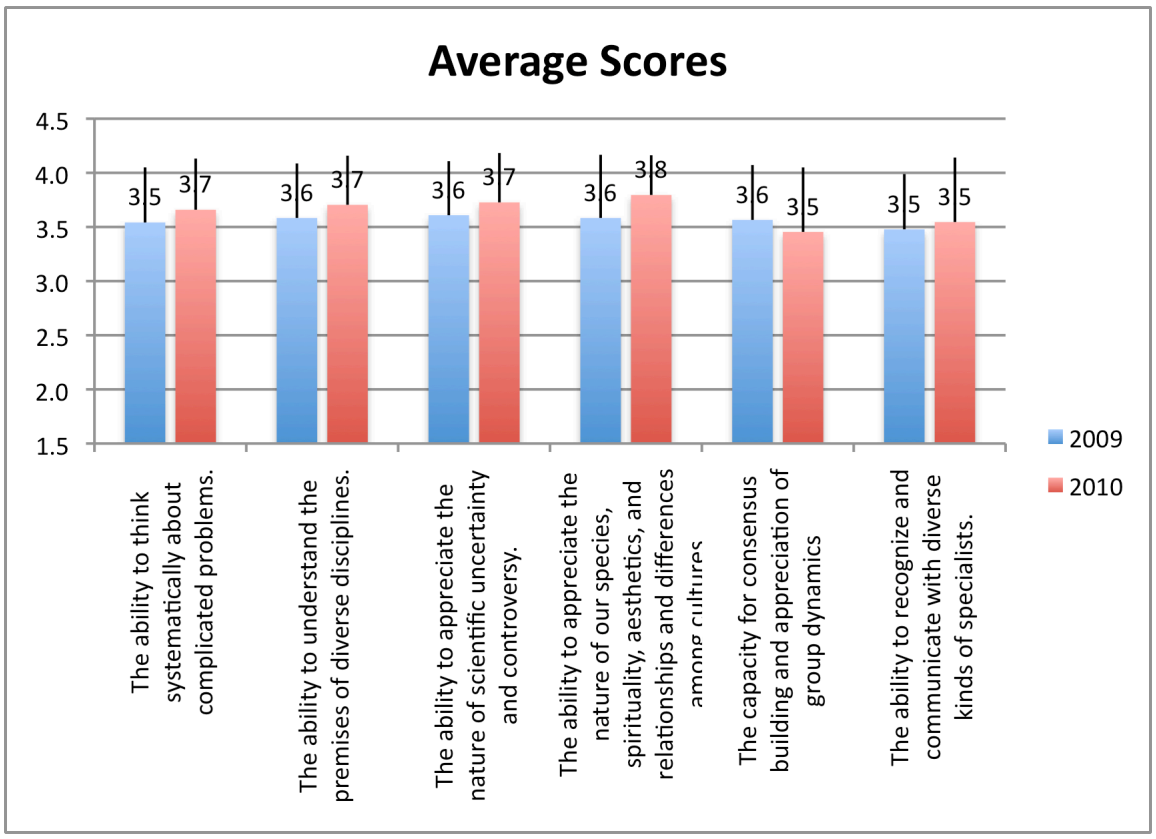


Figure 1 - Senior Outcomes Assessment – Comparing 2009 and 2010

On the whole 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 2010 ratings were consistent with 2009 ratings. As in 2009, we had the most difficulty assessing the students' ability to master "The ability to appreciate the nature of our species, spirituality, aesthetics and relationships and differences among cultures" and Figure 1 shows that this outcome had the highest degree of variability in the score in 2009 and the greatest change from 2009 to 2010. As indicated again in the 2010 summary of the senior survey, many students are interested in areas of environmental justice and ethics, and desire to have more offerings in these areas. We hope to make this a more concrete theme in next year's Classics course readings, discussions, and writing assignments and this should make the outcomes easier to assess.

In 2009 we decided that discussing these outcomes at the end of a student's senior year was problematic. We felt we may be able to do a better job at assessment if we understood earlier on where our knowledge gaps in an individual student's mastery of outcomes resides. Thus we decided to try completing a first round examining student's mastery in the fall of the senior year. We thought this would provide us the opportunity to gather more information from other faculty who have taught students about their mastery of particular outcomes. We attempted this in fall 2009, but again felt less than satisfied with the process. Partially this was due to time constraints and partially due to the lack of response from advisers from outside the department. We will again attempt to review students' progress on these outcomes in the fall with a goal to improve our confidence in rating students mastery.

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