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# The University of Georgia

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School of Law

**TO:** Dr. Arnett C. Mace, Jr.  
Senior Vice President for Academic Affairs and Provost

**FROM:** Environmental Literacy Requirement Review Committee

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**DATE:** August 15, 2003

**RE:** Report of the Environmental Literacy Requirement Review Committee

## EXECUTIVE SUMMARY

You have asked this committee to review the undergraduate environmental literacy requirement. After careful review, we have concluded that the environmental literacy requirement as presently constituted does not function well. We make, therefore, the following two alternative recommendations:

The University should amend the requirement to resemble the literacy requirements in the constitutions and history of the United States and Georgia. Students would take a test to determine their environmental literacy. If they successfully passed the test, they would not be required to take any additional courses. Students who do not pass the test would be required to take a one-hour remedial course taught on an S/U basis and achieve an S. If the University chooses this course of action, it would be reevaluated after five years to determine whether a substantial majority of students are testing out of the requirement, how many students must take the remedial course to satisfy the requirement, the extent to which the additional course has improved their environmental literacy, and whether this additional

course work delayed graduation. A committee would be appointed to devise the learning objectives for the environmental literacy requirement, to write the test and outline the topics to be covered in the proposed remedial course, and, at the end of five years, to review the data and to recommend keeping, revising, or abolishing the environmental literacy requirement.

Alternatively— and this recommendation should be adopted only if the University is not committed to devoting the effort and resources to the first alternative set forth above— the University should abandon the requirement altogether now without any further review.

## BACKGROUND

The University of Georgia has a few requirements that all undergraduates, regardless of their college or school, must satisfy in order to obtain a baccalaureate degree. These requirements are not necessarily requirements that apply throughout the University System of Georgia. The first is in oral communication and computers. This requirement provides that “[e]ach undergraduate major at the University of Georgia will require students to demonstrate oral communication and basic computer skills appropriate for a graduate in the major.” University of Georgia, *Undergraduate Bulletin* 34 (2003-04). This directive leaves up to each department the level of skills that a student must acquire and the means of determining whether a particular student has acquired those skills. Second, students must establish through an examination that they have sufficient knowledge of the constitutions of the United States and of the State of Georgia. Students may obtain an exemption from this requirement if they take one or two of approximately eleven courses in political science or history. *Ibid.* Third, students must establish through examination sufficient knowledge of the history of the United States and of the State of Georgia. *Ibid.* Students may receive an exemption from this exam by enrolling in a limited number of courses in history. These two requirements are mandated by state law. Official Code of Georgia Annotated § 20-3-68 (2001). Fourth, all students must enroll in one semester hour of physical education unless exempted. *Undergraduate Bulletin*, 36. Fifth, all students must enroll in English 1101 and 1102. *Ibid.*, 37. Sixth, all students who matriculated in Fall 2002 or afterwards must comply with the University of Georgia Cultural Diversity Requirement. This requirement can be satisfied by curricular or extracurricular work, and each college or school has established its own list of courses and programs that satisfies this requirement. Seventh, and the focus of our review, all students who matriculated in Fall 1993 or afterwards must “attain a knowledge of basic principles concerning environmental issues.” *Ibid.*, 33. Although each college or school may establish its own general requirements for obtaining a baccalaureate degree, these requirements apply University-wide.

The University of Georgia adopted the environmental literacy requirement in 1993, at the instigation of President Knapp. At the time, the environmental literacy requirement could be satisfied only by an undergraduate student enrolling in a course that offered instruction in the following six areas:

- \* Basic scientific principles which govern natural systems, using these to understand the limits and the major factors associated with earth’s capacity to sustain life;
- \* Linkages among all living things and their dependency on each other as well as the

physical environment;

- \* Consequences of human activity on local, regional, and global natural systems;
- \* Impact of changes within natural systems on life, health, and welfare;
- \* Cultural, economic and political forces— both past and present— that affect environmental attitudes and decision making; and
- \* Role of ethics and morality in individual and group decision making related to the environment.

Committee on Environmental Literacy, *Environmental Literacy: Policy and Procedures 1* (1993) (attached as Appendix A). The 1993 Committee proposed procedures to implement this new requirement by establishing an Environmental Literacy Board that would evaluate each department's proposal on how it would meet the environmental literacy requirement. The 1993 Committee expected that students in science departments would probably "need to learn about social, political and economic issues related to the environment," while students in the humanities for "better comprehension of the science underlying environmental issues would be necessary." *Ibid.*, 3.

Initially, the 1993 Committee believed that different departments could meet the environmental literacy requirement in different ways depending on whether the department was primarily requiring many courses in the sciences, those departments which relied on the core science curriculum, those departments "not requiring a core science sequence which emphasizes environmental concepts and themes," and those departments "which accept numerous students who transfer from other institutions, perhaps with inappropriate environmental coursework." *Ibid.*, 4. This flexible scheme of how each department might meet its responsibility stemmed, in part, from the recognition that any new requirement entails practical considerations. Specifically, the 1993 Committee recognized that "[r]equiring additional coursework is often problematic because undergraduates in many programs already have difficulty graduating in four years due to the high number of required courses." *Ibid.*, 2.

Despite the flexibility envisioned in the original proposal, rigidity ensued. Few courses satisfied all six of the requirements laid out in the original proposal, and students were thus required to take one of these few courses in order to receive their degree. Students clogged these few courses and, because of limited slots, some felt that this limitation may have delayed graduation for some students.

In response to this rigidity, the University Council Curriculum Committee formed a subcommittee to review the environmental literacy requirement "due to concern over the number of hours required and the overall effectiveness of the requirement." University Council of the University of Georgia, *Semester Environmental Literacy Requirement* (March 17, 1998) (attached as Appendix B). The Curriculum Committee eventually proposed that University Council "limit the criteria for Environmental Literacy to the following: 1) *Basic scientific principles which govern natural systems.* 2) *The consequences of human activity on local, regional, and global natural systems.*" *Ibid.* Thus, to satisfy the environmental literacy requirement, a course had to offer both a basic discussion of

environmental science and a basic discussion of what best can be called environmental ethics or environmental policy. Each college and school was to submit a list of courses to the University Curriculum Committee that satisfied these criteria, and a student only had to take one course from the approved list to satisfy the requirement. As it now stands, students can enroll in any of approximately ninety courses to fulfill the environmental literacy requirement. (See Appendix C.)

An external review of the environmental literacy requirement was suggested in 1993, and in 1998 University Council reiterated this suggestion. At a recent meeting that you had with the University Curriculum Committee, that committee requested that you appoint an external review committee. In response to that request, you formed this Committee to review the environmental literacy requirement.

### EVALUATION OF THE ENVIRONMENTAL LITERACY REQUIREMENT

After reviewing the environmental literacy requirement as it presently stands, this Committee has concluded that there are at least five problems with it. First, the environmental literacy requirement has no means of evaluating its efficacy. There is no way of measuring whether students, having taken one of the ninety courses that satisfy the requirement, are leaving the University being environmentally literate, i.e. having basic knowledge in both the scientific and ethical or policy components of environmental study. Moreover, the University has no way to determine whether that knowledge is gained as part of the undergraduate education at UGA or whether students arrive at UGA with some measure of environmental literacy to begin with. This lack of measurement and assessment plagues any proper review of the requirement and thus runs throughout the other four criticisms.

Second, this Committee believes that too many courses satisfy the environmental literacy requirement. After reviewing a sample of the course descriptions of the approximately ninety courses on the approved list, it is hard to see how some of them introduce a student to both "basic scientific principles which govern natural systems" and the "consequences of human activity on local, regional, and global natural systems." This criticism is not to fault the decisions of those who approved the courses to satisfy the requirement or the content of the courses themselves. Indeed, approving the courses restored the flexibility originally envisioned in the first environmental literacy requirement proposal. Nevertheless, when one considers that many courses appear not to have environmental issues as a core of the class combined with our first criticism (the lack of means to evaluate the efficacy of the program), it is hard not to conclude that a student might satisfy the written requirement but not leave the University an environmentally literate person in fact.

Third, undergraduates have many requirements to satisfy already and it is unclear whether the environmental literacy requirement actually enhances the undergraduate education at the University. We have no way to determine also whether this requirement burdens students and delays their graduation. Because no test on the principles of environmental literacy is in place, the members of the committee had no data to evaluate whether undergraduates entered the University as environmentally literate students. Moreover, a review of several institutions—peer institutions, land and sea grant institutions, small liberal arts colleges, Ivy League institutions, and other components of the University System of Georgia—revealed that the University of Georgia was unique in having an environmental literacy requirement. (See Appendix D.) The University might

be on the forefront of environmental education; it might also be pursuing a quixotic vision of environmental education by imposing this requirement on all undergraduates. Obviously, UGA has a strong history of path-breaking leadership in environmental education of the highest quality, and it continues that tradition today through the various schools and colleges. Given the history and present state of the requirement, however, one can question whether environmental literacy, as presently defined and implemented, should be a requirement imposed on all undergraduates regardless of major, department, school, or college.

Fourth, as was recognized in the original 1993 proposal, any requirement can prove to be an imposition on undergraduates who face many requirements as it is. Although we could not generate any data to determine the extent to which the environmental literacy requirement has prevented undergraduates from graduating within four years, any requirement for taking an additional course can have that effect. Given the lack of data— and the other reasons that account for students taking longer than four years to complete their baccalaureate degree— this Committee believes that a more careful study may assist the University in determining whether to retain the requirement in the long-term.

Fifth, and finally, this Committee had a difficult time determining what, exactly, constitutes environmental literacy. We had many discussions of what knowledge we would expect a student to know if that student is environmentally literate, and we had a difficult time coming to any hard and fast conclusions. The six principles first established in 1993 could include a whole array of courses and a student may never fully comprehend all of those areas. After the six principles were reduced to two in 1998, it is still hard to decide what exactly the University expects students to understand about the environment to be environmentally literate. Certainly, knowledge in certain areas— for example, the basic mechanics of climate change or the potential ramifications of human-induced extinction of species— would likely be on a list of areas that an environmentally literate person would know about. Nevertheless, unlike the requirement that a student must know specific facts about a bounded text such as the United States Constitution, questions of the environment, by their very nature, are broader in scope and potentially boundless. This problem may account for the wide range of classes that satisfy the present requirement.

## RECOMMENDATIONS

Given these findings, this Committee has determined that the University needs to change the environmental literacy requirement from its present structure. We have formulated two alternative recommendations to be forwarded to University Council for appropriate consideration. The first is to reform the requirement to more closely resemble the only other University-wide requirements for basic knowledge in a specific area, *ie.*, knowledge of the United States and Georgia constitutions (what we will refer to as constitutional literacy) and in the history of the United States and of Georgia (what we will refer to as historical literacy). This proposal would call for study to determine the efficacy of the requirement both from the results of the initial examination and from subsequent evaluation. If, however, the University lacks sufficient resources to implement this proposal, our recommendation is that the University Council should abolish the requirement altogether.

In addition to these two alternatives, this Committee considered other alternatives that will

not be discussed in depth in this report. First, we considered the “no action” alternative of simply letting the requirement stand unaltered. Because of our findings, we do not recommend keeping the environmental literacy requirement in its present state. The University lacks sufficient data to determine whether the environmental literacy requirement actually accomplishes its goals and, as the requirement is presently implemented, these data will never become available. Second, we considered a variation of the first alternative we have proposed in which students who did not pass the test would take a course or courses from a greatly reduced list of approved courses. We will discuss this alternative more fully below as a contrast to our proposal. Third, we considered the possibility of assembling a group of readings that students could review before taking the test, much like the manual of traffic rules and regulations that one can review before taking the written part of the test for one’s driver’s license. We rejected that option because we felt that it would be too demanding of resources to have faculty not only devise the test but to assemble or write the manual as well.

### Alternative A: Revision

Under this alternative, the University would create an Environmental Literacy Examination Committee (ELEC). The ELEC would determine the overall learning objectives for the environmental literacy requirement and then prepare a standardized test on that material that all UGA undergraduates must take. Like the original 1993 environmental literacy requirement and the 1998 revision, the mandatory test would be required only of students who matriculate after the date it is formally adopted. No current student enrolled at the University would be disadvantaged by the revision to the environmental literacy requirement; a student who has already matriculated could either opt to test out of the requirement (and take the examination if he or she fails the test) or to take one of the courses presently approved to satisfy the requirement. For purposes of testing out of the requirement, the test can only be taken once (unlike the constitutional and historical literacy exams, which a student may retake). The test would be administered by the Office of the Vice President of Student Affairs through University Testing Services. This alternative would resemble the constitutional and historical literacy requirements to an extent, although, because those examinations are administered system-wide, the University System of Georgia could draw on resources from all system institutions for assistance in creating the examination. The environmental literacy examination would have to be created entirely in-house. Nevertheless, we have tried to tailor this recommendation to make it as streamlined as possible for students to meet while still ensuring that students are achieving literacy in environmental issues.

#### 1. Recommended Mechanics of the Environmental Literacy Requirement

Under this alternative, this Committee envisions the creation of a test that would require no longer than one hour to take. (Undergraduates may take up to one hour for each of the constitutional literacy examinations and one hour for the history examination.) The present environmental literacy requirement contains two components: introductory knowledge of “basic scientific principles which govern natural systems” (which for ease we will refer to as environmental science although it includes other sciences as well) and introductory knowledge of “the natural consequences of human activity on local, regional, and global natural systems” (which for ease we will refer to as environmental policy, although we recognize that it includes ethical, anthropological, geographic issues, to name a few). Because the requirement contains these two areas, the test would

be comprehensive and contain an equal number of questions from each area. For example, if the test consisted of forty questions, twenty would cover environmental science and twenty would cover environmental policy. Under a sixty percent requirement to pass, a student would have to answer twelve questions from each area successfully to test out of the requirement altogether. (These numbers are examples only; University Council could set the standards itself or delegate that task to the ELEC.) If a student achieved a passing score, the student would satisfy the requirement and no further course work would be required.

By way of comparison, each constitutional literacy exam consists of 50 questions, and a student must answer 30 correctly in order to pass. The history exam consists of 100 questions: 20 concern the history of Georgia; 40 concern United States history up to 1877; and 40 concern United States history since 1877. A student must answer sixty percent correctly in each area (i.e., 12 correct answers on Georgia history and 24 correct answers in each of the areas of United States history) in order to pass the examination. Each of these examinations is offered once per term (fall, spring, and summer) free of charge to first-time test takers; Testing Services administers individual tests throughout the semester for a small fee. Dates for the test are announced in the schedule of classes and are available on OASIS.

We recommend, if at all possible, that the environmental literacy standardized test be administered frequently, and certainly no less frequently than once each term (fall, spring, summer) for maximum flexibility for students. Testing Services would administer the test and report the results to the ELEC with a breakdown of how students performed in each criterion. Ideally, students could take the examination individually or perhaps over the Internet for maximum flexibility. Testing Services reports that if the University creates the test in-house it would likely charge students a nominal fee (\$10-\$15) to administer the test if it is a multiple choice test.

Rather than allowing a student to enroll in one of the panoply of approved courses that now satisfy the requirement, we recommend that a student who failed the test would take a one-credit-hour course in environmental literacy that would be graded on an S/U basis. Given that the course would count for one credit hour only, it could be administered more than once per semester without undue interference with student schedules. A logical college to administer the course would be the College of Environment and Design, but we have taken no firm view on the question of which college or school should administer the course or whether it should be administered by multiple colleges and schools. (This Committee has no member representing the College of Environment and Design, and we are reluctant for that reason alone to take a stance on this question.) The ELEC would set the curriculum for the course. Depending on the college or colleges that teach the course, the curriculum may have some flexibility to reflect the different focuses of the different colleges and schools but it would still be geared toward the learning objectives that the ELEC identifies as making up the minimum of environmental literacy.

After considerable debate and deliberation, we decided that it would be preferable to create this new course rather than using courses in the existing curriculum to satisfy the requirement. We recognize that suggesting a new course has disadvantages. A new S/U course would be an additional requirement beyond what a student must take to satisfy the core curriculum and using present courses in the curriculum might allow a student to accomplish two requirements at once. Moreover, a new course raises practical problems such as questions of staffing the course,

identifying the faculty who will teach the course, and providing sufficient incentive and reward for these faculty members.

Nevertheless, we have concluded that a new remedial course would be an improvement over attempting to use courses in the present curriculum to satisfy the requirement. Inevitably, one of two things will happen. In one scenario, the list of approved courses that satisfy the environmental literacy requirement will either grow to its present extent of approximately ninety courses (as happened after the 1998 revisions to the requirement). If that occurs, it will be difficult to determine whether students are actually learning what they did not know for the examination. In the other scenario, the list of approved courses will be so constricted that it will funnel students into courses that they do not want or otherwise need for their degree (as happened after the original adoption of the 1993 requirement). A new course can cover both environmental science and environmental policy. Our expectation is that most undergraduates will likely test out of the requirement, and adding a new course means that present courses will not have to be altered to ensure that they are covering environmental issues adequately. In addition, because the environmental literacy requirement is unique to UGA, transfer students might come to UGA with credit in the approved courses but fail the environmental literacy test. If we relied on the present curriculum as the remedial course work, some transfer students may be blocked from taking those courses again for credit. A remedial one-hour course would thus apply to all students whether they entered UGA initially or as a transfer student.

Another advantage to a remedial S/U course is that it could use the environmental literacy test as its testing instrument to determine whether a student passes or not. Using the test this way would have two advantages. First, it would relieve the instructors of the burden of devising, administering, and scoring an examination instrument. Second, it would provide useful data to the ELEC. One of the difficulties this Committee had in evaluating the present environmental literacy requirement was determining whether recipients of a bachelor's degree from UGA actually left the University environmentally literate. The ELEC would have this data to determine the areas in which students are deficient and use that information to change the course as necessary.

## 2. Recommended Composition and Functions of ELEC

The Senior Vice President for Academic Affairs and Provost (perhaps acting through the Vice President for Instruction) would receive nominations and appoint a total of seven representatives to the ELEC from the following colleges and schools:

- College of Agricultural and Environmental Sciences (1)
- Franklin College of Arts and Sciences (2— one representing environmental policy and one representing environmental science)
- Terry College of Business, Grady College of Journalism and Mass Communication, and School of Public and International Affairs (1)
- College of Education, College of Family and Consumer Sciences, and School of Social Work (1)
- College of Environment and Design (1)
- Warnell School of Forestry and Natural Resources (1)



Each college or group would nominate its representative (of representatives). In addition, the Provost would appoint a chair of the committee at-large from any college or school. We have not included automatic representatives for the Colleges of Pharmacy and Veterinary Medicine and the School of Law because they do not award baccalaureate degrees. Nevertheless, the Provost could select a faculty member from one of these colleges to serve as the chair of the ELEC. Each member of the ELEC would serve on the committee for a term of three years, and the terms would be staggered so that the membership of the ELEC would not change all at once. For continuity, we recommend that the chair serve for three years. Members would be eligible to seek reappointment at the end of their terms.

The ELEC would have three primary responsibilities. First, the ELEC would have to determine the learning objectives for environmental literacy. The standards first adopted in 1993 and distilled in 1998 do not provide concrete areas of knowledge that the University expects students to attain in deciding whether they are environmentally literate. Upon determining the learning objectives for the area, the ELEC would then design the proposed test, determine the number of questions, determine the standard used to determine whether a student passed one or both criteria, and, of course, determine the content of the questions.

Second, the ELEC would set the syllabus for the proposed remedial course and its content. The ELEC could choose to have every course have the same exact text, or it could specify a list of approved texts that would be appropriate. The latter option might be more appropriate if the University Council determines that the remedial course can be taught across the various schools and colleges. That way, a school or college could tailor the course slightly to fit more precisely with its overall needs.

Third, at the end of a decent interval for study, the ELEC will report to University Council with information about the success of the environmental literacy requirement. We recommend that the ELEC make such a preliminary report in three years with a comprehensive review to follow in five years, when it will have a good set of data to review. In its review, the ELEC will describe how many students pass the initial test; the areas in which students are most lacking in their knowledge (environmental science or environmental policy or both); and the results of the post-test and, finally, conclusions on the efficacy of the course used to satisfy the environmental literacy requirement. The ELEC will then recommend whether the environmental literacy requirement should be maintained (because of its demonstrated efficacy) or abandoned (either because an overwhelming number of students test out of the requirement because of prior knowledge or because the post-test results show that the program is not working). If University Council decides to maintain the program, we suggest such periodic self-review every five years.

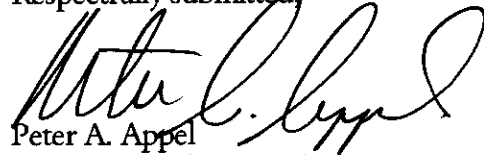
### **Alternative B: Abolition of the Requirement**

If the University is unwilling or unable to devote the resources necessary to implement Alternative A, this Committee recommends that the environmental literacy requirement be abandoned. Since its inception, the environmental literacy requirement has not functioned in the way envisioned ten years ago. At first, very few courses satisfied the requirement and students were concentrated in the few departments that offered courses satisfying the requirement. Many students did not otherwise need these courses and it added to their overall course requirements for

graduation. With the 1998 revision to the requirement, approximately ninety courses satisfy the requirement. Although this expansion of the list of courses has made the requirement less onerous for undergraduates, there is no evidence that it has guaranteed environmental literacy among undergraduates.

The primary drawback of this alternative is that it may be taken by some both within the University community and those outside of it as evidence of a lack of commitment to environmental understanding and education. However, the environmental literacy requirement as it presently stands has not created a drive for similar requirements at other colleges and universities, even within the University System of Georgia, and it is not at all clear that it serves to assure basic knowledge of environmental literacy among graduates of the University of Georgia. UGA undergraduates may be better served by allowing them additional flexibility in pursuing courses more directly connected to their chosen field of study or personal taste.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Peter A. Appel", written in a cursive style.

Peter A. Appel  
Associate Professor and  
Chair, Environmental Literacy Requirement  
Review Committee

# **APPENDIX A**

**ENVIRONMENTAL LITERACY: POLICY AND PROCEDURES****Criteria for Environmental Literacy**

Environmental literacy encompasses a wide realm of concepts and attitudes. Thus the committee proposes a rather broad set of criteria which operationally define this concept.

An environmentally literate person is one who comprehends and is able to critically evaluate:

\* Basic scientific principles which govern natural systems, using these to understand the limits and the major factors associated with earth's capacity to sustain life;

\* Linkages among all living things and their dependency on each other as well as the physical environment;

\* Consequences of human activity on local, regional, and global natural systems;

\* Impact of changes within natural systems on life, health and welfare;

\* Cultural, economic and political forces - both past and present - that affect environmental attitudes and decision making; and

\* Role of ethics and morality in individual and group decision making related to the environment.

**Recommended Procedures**

The criteria stated above will provide guidance for the approval of academic experiences which will satisfy the environmental literacy requirement at the University of Georgia. This committee suggests the following specific procedures for implementing these policy recommendations.

1. Academic units will submit to the Environmental Literacy Board proposals which justify and demonstrate how their undergraduate programs will meet the environmental literacy criteria.

2. The Board will evaluate whether each proposal adequately satisfies the environmental literacy criteria.

3. Any new courses or course changes designed to contribute to environmental literacy criteria will be submitted and approved through normal curriculum channels within the University.

4. Whether transfer students have already achieved environmental literacy prior to their arrival at the University of Georgia will be determined at the college and academic unit level. Undergraduate advisors will play a key role in this determination. The University curriculum committee will periodically review academic units' handling of transfer cases.

## Environmental Literacy: Policy and Procedures (page 2)

### Implementation Considerations

There is no one "best" way for an undergraduate student at The University of Georgia to become environmentally literate. Instead, ways of achieving environmental literacy will vary for individual students and across academic majors. Moreover, it is unrealistic and undesirable, to expect all undergraduate students, regardless of major, to achieve the same type and degree of environmental literacy. Instead, we expect that all undergraduates develop depth in one or more components (e.g., the scientific, social, political, artistic or economic aspects related to environmental literacy) and breadth across others. It is important that academic units propose environmental literacy plans which are integrative and broader in scope than the specific academic interests of that unit.

A number of practical limitations related to implementing an environmental literacy policy must be considered by individual departments. Requiring additional coursework is often problematic because undergraduates in many programs already have difficulty graduating in four years due to the high number of required courses. Other restricting factors include limited resources (e.g., faculty, classroom, finances) which constrain the number of new courses and course sections which can be taught at The University of Georgia.

Departments must first analyze their programs to identify strengths and weaknesses relative to the criteria for environmental literacy. Science departments are already likely to have programs which develop a deep understanding of the scientific principles associated with environmental problems; they thus need to learn about social, political and economic issues related to the environment. Similarly, humanities programs are likely to generate considerable understanding of the philosophical, political or social issues associated with environmental problems; for the, better comprehension of the science underlying environmental issues would be necessary.

Particular departments may choose to implement the six criteria through one or two courses; others may decide to develop them throughout various courses in its program. With this in mind, we envision the environmental literacy requirement being accomplished in different ways, depending on the discipline. These might include a combination of the following:

- Utilizing courses for the University Core Curriculum which also help to fulfill the environmental literacy requirements.

- Requiring already existing courses in disciplines outside of the major which help to develop a well rounded environmental awareness.

- Designing or re-organizing an entire course(s) required of majors in a discipline so as to develop a broad, discipline specific understanding of environmental issues.

- Stimulating individual experiences, independent study, or other activities that tie environmental issues to the major discipline.

Environmental Literacy: Policy and Procedures (page 3)

How particular types of departments might meet the criteria can be shown through a few examples.

**Example A.** Certain departments already require numerous courses in biological and physical science which develop understanding of natural systems. To fulfill the environmental literacy criteria, these departments might choose either of two paths. They could create a course (or require an existing one) that emphasizes the human, cultural, economic, ethical and political forces which come to bear on environmental issues. Such courses might be offered by social sciences or humanities departments or team taught with biological and physical science faculty. These courses might be taught as part of the major or as an elective in the core. Conversely, they might choose to integrate these matters throughout various courses in the major field. In either case, the departments may prefer to make the experience more pertinent to students by stressing the relationship of the environmental issues to their discipline.

**Example B.** Departments which require no science courses beyond the core have a different circumstance. They might choose to have their students take a core science sequence which emphasizes environmental concepts and themes. To meet the other environmental literacy criteria they might choose either the paths outlined in the first example.

**Example C.** Departments not requiring that students take a core science sequence which emphasizes environmental concepts and themes, present another situation. These departments might require another course which ensures a broad overview of the scientific principles which govern natural systems. To meet the other environmental literacy criteria they might choose either of the paths outlined in the first example.

**Example D.** Departments which accept numerous students who transfer from other institutions, perhaps with inappropriate environmental coursework, also present different problems. Decisions about whether particular students meet the intent of the University environmental literacy policy should be left to colleges and academic units and should be based upon the intent of the approved program for the unit. In some cases, these departments might choose to require an extra course which ensures a broad overview of the biological and physical scientific principles which govern natural systems, if such is lacking. In other cases, departments might require a specific course or set of courses to deal with the human, cultural, ethical, economic or political aspects of environmental literacy.

## **APPENDIX B**

# Semester Environmental Literacy Requirement

Approved by University Council of the University of Georgia on March 17, 1998

The *Environmental Literacy Requirement* subcommittee was charged with review of the Environmental Literacy requirement due to concern over the number of hours required and the overall effectiveness of the requirement. The Full Committee approved the following proposal from the subcommittee which has been forwarded to the Executive Committee of Council for consideration:

- 1) The Full University Curriculum Committee recommends an external review of the Environmental Literacy Requirement.
- 2) The Committee also recommends that the University, until the advice of the external review can be considered, limit the criteria for Environmental Literacy to the following:
  - 1) *Basic scientific principles which govern natural systems.*
  - 2) *The consequences of human activity on local, regional, and global natural systems.*

This will begin fall of 1998 and remain in place until the results of the external review can be implemented.

- 3) Each college/school will be invited to submit a list of semester courses that satisfy the above criteria. The University Curriculum Committee will approve the courses satisfying the requirement. Only one course will be necessary to satisfy the requirement.
- 4) No current student will be disadvantaged by the change in the Environmental Literacy Requirement. Students currently enrolled will be allowed to satisfy the requirement under the existing or new requirement. Any student who has satisfied the Environmental Literacy Requirement for any school or college of the University shall receive credit for fulfillment of the Environmental Literacy Requirement.



## **APPENDIX C**

Institution	Environmental Literacy Requirement?	Mandatory Exam?
Alabama A&M University	No	
Alabama State University	No	
Alaska Pacific University	No	
Albany State University	No	
American University	No	
Arizona State University	No	
Arkansas State University	No	
Auburn University	No	
Ball State University	No	
Baylor University	No	
Boston College	No	
Boston University	No	
Bowling Green State University	No	
Brandeis University	No	
Brigham Young University	No	
Brown University	No	
Bryn Mawr College	No	
California Institute of Technology	No	
California State University, LA	No	
Carnegie Mellon University	No	
Case Western Reserve University	No	
Clark Atlanta University	No	
Clemson University	No	
College of the Atlantic	No	
College of William and Mary	No	
Colorado State University	No	
Columbia University	No	
Cornell University	No	
Dartmouth College	No	
DePaul University	No	
Duke University	No	
Emory University	No	
Florida International University	No	
Florida State University	No	
Georgetown University	No	
Georgia Institute of Technology	No	
Georgia State University	No	

Harvard University	No	
Howard University	No	
Humboldt State University	No	
Idaho State University	No	
Illinois State University	No	
Indiana State University	No	
Iowa State University	No	
Johns Hopkins University	No	
Kansas State University	No	
Kent State University	No	
Lehigh University	No	
Louisiana State University	No	
Marquette University	No (see attached)	
Massachusetts Institute of Technology	No	
Miami University	No	
Michigan State University	No	
Minnesota State University	No	
Mississippi State University	No	
Montana State University	No	
Murray State University	No	
New York University	No	
North Carolina State University	No (see attached)	
Ohio State University	No	
Oklahoma State University	No	
Old Dominion University	No	
Oregon State University	No	
Pennsylvania State University	No	
Princeton University	No	
Purdue University	No	
Rice University	No	
Rutgers University	No	
San Francisco State University	No	
San Jose State University	No	
Southern Methodist University	No	
Stanford University	No	
State University of New York, Stony Brook	No	
Syracuse University	No	
Temple University	No	
Texas A&M University	No	
Texas Christian University	No	

Troy State University	No	
Tufts University	No	
Tulane University	No	
Tuskegee University	No	
University of Alabama	No	
University of Alaska	No	
University of Arizona	No	
University of Arkansas	No	
University of California, Berkeley	No	
University of California, LA	No	
University of Chicago	No	
University of Colorado	No	
University of Connecticut	No	
University of Delaware	No	
University of Florida	No	
University of Georgia	YES (see attached)	No
University of Hawaii	No	
University of Idaho	No	
University of Illinois	No	
University of Iowa	No	
University of Kansas	No	
University of Kentucky	No	
University of Louisiana	No	
University of Maine	No	
University of Maryland	No	
University of Massachusetts	No	
University of Michigan	No	
University of Minnesota	No	
University of Mississippi	No	
University of Missouri, Columbia	No	
University of Montana	No	
University of Nebraska	No	
University of Nevada, Las Vegas	No	
University of New Hampshire	No	
University of New Mexico	No	
University of North Carolina at Chapel Hill	No	
University of North Dakota	No	
University of Oklahoma	No	
University of Oregon	No	
University of Pennsylvania	No	

University of Rhode Island	No	
University of South Carolina	No	
University of South Dakota	No	
University of Tennessee	No	
University of Texas at Austin	No	
University of Utah	No	
University of Vermont	No	
University of Washington	No	
University of Wisconsin	No	
University of Wyoming	No	
Wayne State University	No	
Wesleyan University	No	
West Virginia University	No	
Wright State University	No	
Yale University	No	

**(University Standing Committee)  
Council on Undergraduate Education Minutes**

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**Council on Undergraduate Education  
Minutes April 4, 2003**

Members present: G. Luginbuhl, chair, J. Ambrose, J. Anderson, S. Ash, M. Bresciani, M. Carter, J. Cohen, C. Goode-Vick, D. Greene, A. Headen, J. Knopp, M. McCord, M. Oakleaf, M. Robbins, J. Robinson, M. Shearer, R. Slatta, J. Tector, K. Wallace

Guests: Roger Callanan, Will Hooker, Erin Malloy-Hanley, Larry Nielsen, Philip Stuckey, Robert Todd

The minutes of March 21, 2003 were approved as written.

Members of the NC State Sustainability Coalition Task Force on Education/Academic Affairs (NCSSC) presented a recommendation that CUE consider a curricular response to NC State's "1999 Commitment to Environmental Sustainability" by requiring students to select an environmentally focused course as part of their GER.

The task force had queried the campus to compile a list of environmentally focused courses. Their research has shown that 65% of this year's graduating class had already taken one of these courses. Although an encouraging figure, they would like to see that it remains or increases and see that there is a formalized mechanism for ensuring student exposure to environmental course content. They had also developed an objective statement that could be potentially used to qualify courses for GER inclusion in the area.

The objective statement had not been part of the criteria given to the faculty queried for the course list, so CUE requested that the list be re-drawn based on those courses that would actually fit the objective. If such a course list were eventually to be considered for use in the GER, CUE would need to examine the courses for considerations such as course level, pre-requisites and restrictions. CUE also would like to see a breakdown of the courses taken by the 65% of students quoted to determine if the course was required in the major and what percentage of the courses represented were at upper levels.

Chair Luginbuhl requested that the task force bring back the additional information by semester end so that CUE can begin deliberations next term. These deliberations must first determine the importance of adding an Environmental requirement to the GER weighed against other requests received for added requirement areas (such as diversity). If CUE then determines it is appropriate to add this content area, it will then have to determine how it might be incorporated. Vice Provost Anderson also requested that in any future consideration of an environmentally focused requirement, CUE carefully consider the May 1999 Board of Trustees document on Commitment to Environmental Sustainability and the April 2000 Recommendations of the North Carolina State

## University Environmental Sustainability Task Force.

### Review of courses for GER listing:

#### AFS/ENG 375 African American Cinema

A motion to accept the course for the Humanities and Social Sciences, Visual and Performing Arts list was defeated in a vote of 4 in favor and 6 opposed. Concerns were raised over the possibility of a phantom pre-requisite as per the statement in the course justification "...the course will normally be taken in the junior or senior year...because it draws upon the analytical frameworks of introductory courses." If other pre-requisites exist in addition to the stated pre-requisite of ENG 101, the course would exceed the single pre-requisite allowed for GER courses.

### GER objectives drafts:

A draft for the Science, Technology and Society was distributed. Comments included the fact that the list of objectives may be too lengthy if CUE is going to maintain that each course on the list adhere to all objective statements. Suggestions included: 1) a possible overlap in objective 1 and 3 that could be combined and 2) consideration of treating this category differently than the others by allowing courses to adhere to some rather than all of the objective statements. The committee would like to see a re-draft of the objectives before consideration of treating this category differently by allowing courses to adhere to only some of the objectives.

Submitted by Kathy Wallace

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[Abbreviations](#)

[Committee Tutorial](#)

[Search the Office of the Provost](#)

[University Committees](#)

Comments may be sent to [academic@ncsu.edu](mailto:academic@ncsu.edu)  
Last Updated: Tuesday, May 6, 2003

To:

From: Robyn Ansley <ransley2@arches.uga.edu>

Subject: Environmental Literacy

Cc:

Bcc:

X-Attachments:

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I am conducting a survey of institutions in the United States that have an Environmental Literacy requirement for graduation. Does University have such a requirement? If so, is there a mandatory exam students must take in the subject before receiving an undergraduate degree?

Thank you for any assistance you can give us.

Robyn Ansley

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Room 211 Marine Sciences Building

Athens, GA 30602

tel: (706) 542-5868

FAX: (706) 583-0376

SAMPLE E-MAIL SENT TO EACH INSTITUTION AFTER A WEB SEARCH OF THE CORE CURRICULUM FOR THAT INSTITUTION



To: <ransley2@uga.edu>

From: Robyn Ansley <ransley2@arches.uga.edu>

Subject: Re: General Question/Comment

Cc: "Steven Schultz" <steven.schultz@marquette.edu>

Bcc:

X-Attachments:

---

RESPONSE IN CAPS AFTER YOUR QUESTIONS.

Jame Schaefer, Ph.D.

Department of Theology

Marquette University

115 Coughlin Hall

Milwaukee WI 53201-1881

414-288-3742; -5548 (fax)

www.inee.mu.edu

www.theo.mu.edu/schaefer

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NO, MARQUETTE DOES NOT REQUIRE AN ENVIRONMENTAL LITERACY REQUIREMENT FOR GRADUATION.  
HOWEVER, WE OFFER AN INTERDISCIPLINARY MINOR IN ENVIRONMENTAL ETHICS (www.inee.mu.edu) AND  
URGE OUR STUDENTS TO TAKE THE GREEN GRADUATION PLEDGE.

I'D APPRECIATE KNOWING ABOUT ANY INSTITUTIONS THAT REQUIRE ENVIRONMENTAL LITERACY AND  
EXACTLY WHAT IT CONSTITUTES.

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Room 211 Marine Sciences Building

Athens, GA 30602

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# APPENDIX D

## Semester Environmental Literacy Requirement

Approved by University Council of the University of Georgia on March 17, 1998

The *Environmental Literacy Requirement* subcommittee was charged with review of the Environmental Literacy Requirement due to concern over the number of hours required and the overall effectiveness of the requirement. The Full Committee approved the following proposal from the subcommittee which has been forwarded to the Executive Committee of Council for consideration:

1. The Full University Curriculum Committee recommends an external review of the Environmental Literacy Requirement.
2. The Committee also recommends that the University, until the advice of the external review can be considered, limit the criteria for Environmental Literacy to the following:
  1. *Basic scientific principles which govern natural systems.*
  2. *The consequences of human activity on local, regional, and global natural systems.*

This will begin fall of 1998 and remain in place until the results of the external review can be implemented.

3. Each college/school will be invited to submit a list of semester courses that satisfy the above criteria. The University Curriculum Committee will approve the courses satisfying the requirement. Only one course will be necessary to satisfy the requirement.
4. No current student will be disadvantaged by the change in the Environmental Literacy Requirement. Student currently enrolled will be allowed to satisfy the requirement under the existing or new requirement. Any student who has satisfied the Environmental Literacy Requirement for any school or college of the University shall receive credit for fulfillment of the Environmental Literacy Requirement.

## Courses Approved to Satisfy the Environmental Literacy Requirement

<u>AAEC 3060</u>	Principles of Resource Economics
<u>AAEC 4650</u>	Environmental Economics
<u>AAEC 4800/6800-4800L/6800L</u>	Water Resource Economics
<u>AAEC 4930/6930</u>	Environmental Law and Governmental Regulation
<u>ADSC 2010, ADSC 2010L</u>	Introductory Animal and Dairy Science, Introductory Animal and Dairy Science Laboratory
<u>ADSC 4010</u>	Issues in Animal Agriculture
<u>ANTH 1102</u>	Introduction to Anthropology
<u>ANTH 4070/6070</u>	Cultural Ecology
<u>ANTH 4790/6790</u>	Human Adaptation
<u>BIOL 1103</u>	Basic Concepts in Biology
<u>BIOL 1104</u>	Organismal Biology
<u>BIOL 1107-1107L</u>	Principles of Biology I
<u>BIOL 1108-1108L</u>	Principles of Biology II
<u>BTNY 1210</u>	Principles of Plant Biology
<u>BTNY 1220</u>	Organismal Plant Biology
<u>CHEM 1110, CHEM 1110L</u>	Elementary Chemistry, Elementary Chemistry Laboratory
<u>CMLT 3210</u>	Ecocriticism
<u>CRSS 2010-2010L</u>	Crop Science
<u>CRSS 3050-3050L</u>	Principles of Soil Science
<u>CRSS(FORS) 3060-3060L</u>	Soils and Hydrology
<u>CRSS 4340/6340, CRSS 4340L/6340L</u>	Weed Science, Weed Science Laboratory
<u>CRSS 4400/6400</u>	Crop Ecology
<u>CRSS 4590/6590-4590L/6590L</u>	Soil Fertility
<u>CRSS 4670/6670</u>	Environmental Soil Chemistry
<u>ECOL 1000-1000L</u>	Ecological Basis of Environmental Issues
<u>ECOL 3070</u>	Environment and Humans
<u>ECOL(BIOL) 3500-3500L</u>	Ecology
<u>ECOL(EETH) 4200/6200</u>	Ecological Values
<u>ECON 2100</u>	Economics of Environmental Quality
<u>EDES 1500</u>	Design and the Environment
<u>EETH(AESC) 4190/6190</u>	Agricultural Ethics
<u>EHSC 3060</u>	Introduction to Environmental Health Science
<u>EHSC 4490/6490</u>	Environmental Toxicology
<u>ENGR 3050</u>	Soil and Water Resource Conservation

<u>ENTO 3740-3740L</u>	Agricultural Entomology
<u>ENTO(CRSS) 4250/6250-4250L/6250L</u>	Pesticide Management and Utilization
<u>ENTO(CRSS)(PATH) 4740/6740-4740L/6740L</u>	Integrated Pest Management
<u>ESOC 5010/7010</u>	Teaching of Geography
<u>FORS(MARS) 1100</u>	Natural Resources Conservation
<u>FORS 2100</u>	International Issues in Natural Resources and Conservation
<u>FORS 3020-3020L</u>	Forest Ecology
<u>FORS(ANTH)(GEOG)(RLST) 4271/6271</u>	Field Studies in Natural Resources
<u>GEOG 1101</u>	Introduction to Human Geography
<u>GEOG 1111</u>	Introduction to Physical Geography
<u>GEOG 1112</u>	Introduction to Weather and Climate
<u>GEOG 1113</u>	Introduction to Landforms
<u>GEOG 1125</u>	Resources, Society, and the Environment
<u>GEOG 2250H-2250D</u>	Resources, Society, and the Environment (Honors)
<u>GEOG 3210</u>	Biogeography
<u>GEOG(BTNY) 4220/6220</u>	Ecological Biogeography
<u>GEOG 4810/6810</u>	Conservation Ecology and Resource Management
<u>GEOL 1121</u>	Earth Processes and Environments
<u>GEOL 1122</u>	Earth's History of Global Change
<u>GEOL 1250-1250L</u>	Physical Geology
<u>GEOL 1260-1260L</u>	Historical Geology
<u>GEOL 2120</u>	Introduction to Environmental Geology
<u>GEOL 2350H</u>	Physical Geology (Honors)
<u>GEOL 2360H</u>	Historical Geology (Honors)
<u>GEOL 3030</u>	Elementary Oceanography
<u>GEOL 3120-3120L</u>	Geological Hazards
<u>GEOL 3150</u>	Coastal Processes and Conservation
<u>GEOL 3250</u>	Earth Resources and the Environment
<u>GEOL 3300</u>	Paleobiotas
<u>GEOL 4220/6220</u>	Hydrogeology
<u>GEOL 4330/6330</u>	Geology of North America
<u>GEOL 4520/6520</u>	Paleoecology
<u>GEOL(ANTH) 4700/6700</u>	Archaeological Geology
<u>GEOL 4750/6750</u>	Earth Sciences for Middle School Teachers
<u>HONS(BIOL)(CHEM)(GEOG)(PHYS) 2070H</u>	Honors Science
<u>HONS(BIOL)(CHEM)(GEOG)(PHYS)</u>	

<u>2080H</u>	Honors Science
<u>HORT 2000</u>	Horticultural Science
<u>HORT 4890/6890</u>	Biodiversity and the World's Food Crops
<u>HORT 4990-4990D</u>	Environmental Issues in Horticulture
<u>MARS 1010-1010L</u>	The Marine Environment
<u>MARS 1020-1020L</u>	Biology of the Marine Environment
<u>MMIB 4800/6800</u>	Environmental Epidemiology
<u>PATH(ANTH)(BTNY) 3010</u>	Fungi: Friends and Foes
<u>PATH 3530-3530L</u>	Introductory Plant Pathology
<u>PHIL(EETH) 4220/6220</u>	Environmental Ethics
<u>POUL 4330/6330</u>	Basic Mycotoxicology
<u>RLST(FORS) 3310</u>	Outdoor Recreation and Environmental Awareness
<u>RLST 4840</u>	Environmental Interpretation for Recreation
<u>SOCI 3400</u>	Environmental Sociology
<u>SOCI(POLS)(ANTH) 3450</u>	Sociopolitical Ecology
<u>TXMI 3550</u>	Environment, Science, and Technology