Proposal for General Education Reform at UCSC

Committee on Educational Policy
Winter 2009

Summary of Proposal

NOTE: ITEMS (1) AND (3) BELOW REQUIRE A SENATE VOTE

Writing

There is strong faculty consensus that we must improve our students' ability to write, and that this can only happen if writing is emphasized throughout the undergraduate career. Proposals 1-2 address this need.

1. **Disciplinary communication**. We propose that every major-sponsoring unit explicitly articulate its discipline-specific expectations in writing and other forms of communication, and ensure that these goals are met by the requirements of the major. CEP would set minimum standards concerning the amount of writing and instruction in writing; but this requirement would differ from those of the current W in giving departments more say as to how communication objectives are met.

2. <u>Writing support</u>. We cannot do (2) without significant support for writing in the disciplines. We propose that the campus a) re-establish a peer tutoring program in writing; b) re-establish funding to support a full-time coordinator of writing in the disciplines; c) provide concomitant staff support; and d) devote resources where appropriate to make meeting disciplinary communication objectives feasible in every discipline.

General education

3. **General education categories**. Put in the broadest way, the point of general education is promote lifelong learning, and to prepare people to handle the complex and unexpected problems of the future with wisdom and resourcefulness. With this in mind, we propose the following general education requirements, discussed in greater depth below.

Each of:

- Cross-Cultural Analysis
- Ethnicity and Race
- Interpreting Arts and Media
- Mathematical and Formal Reasoning
- Scientific Inquiry
- Statistical Reasoning
- Textual Analysis and Interpretation

One of:

- Environmental Awareness
- Human Behavior
- Technology and Society

One of (2 or more credits):

- Collaborative Endeavor
- Creative Process
- Service Learning

Interdisciplinary topical clusters

4. Interdisciplinary topical clusters. In order to revive the original but now weakened intent of the Topical (T) requirement; to bring more vision and focus to a portion of general education; and to create social and intellectual communities, which are good for retention and a sense of institutional identity, we propose that any portion of the general education requirements can be met through *interdisciplinary topical clusters*. An interdisciplinary cluster is a group of two or more courses focused not on any discipline but on a set of *problems* or *issues* of importance to society. Taken together, the courses in a cluster would represent different disciplines, allowing students to see how one issue or problem can be analyzed according to several methodologies and perspectives. Creating good clusters requires significant collaboration across departments and divisions, a good thing in itself.

5. College affiliation. As a separate matter, we propose that any interdisciplinary topical cluster could serve students of a *specific college*. For example, there will be a cluster on the topic of *sustainability* for students of College 8. Making clusters college-specific would strengthen the academic identity of the colleges and simultaneously deepen affiliations between regular faculty and students of a particular college. Indeed, we invite departments and college provosts to *collaborate* in creating topical clusters. For colleges, clusters would become new territory where the colleges' thematic/academic curriculum could be significantly strengthened and expanded. Finally, we may wish to *link* the first course in the cluster with the college's core course, integrating training in writing with the academic experience of the cluster course.

Educational reflection

Apart from the decisions we make about specific requirements, an important outcome of general education reform would be in the culture and the mechanisms we put into place that contribute to continuous reflection about how well it works. Proposal 6 addresses this meta-issue.

6. Educational objectives. A strong general education program requires educational objectives that are significantly detailed, rigorous, and public. Educational objectives with these properties would be the metric by which faculty proposing or taking over

general education courses would understand what doing so entails. They would similarly be the means by which those approving or reviewing courses could make consistent and defensible decisions. We further propose that departments be periodically asked to reflect on whether their general education courses are meeting these educational objectives. Reflection on this point should be integrated into the regular departmental review process.

Snapshot of proposed requirements

		Code	Distinct Courses	Possibly Overlapping
Cross-Cultural Analysis		CC	1	
Ethnicity & Race		ER	1	
Interpreting Arts & Media		IM	1	
Mathematical & Formal Reasoning		MF	1	
Scientific Inquiry		SI	1	
Statistical Reasoning		SR	1	
Textual Analysis & Interpretation		TA	1	
Perspectives (Choose 1)	Environmental Awareness Human Behavior Technology & Society	PE-E PE-H PE-T	1	
Practice (2-credit) (Choose 1)	Creative Process Collaborative Endeavor Service Learning	PR-C PR-E PR-S	+ (2cr)	
Writing	Composition	C1&C2	1	1
	Disciplinary Communication	DC	*	
Total (= 9+ to 10+)			9+	1

General Education Reform at UCSC

Snapshot of current requirements

(See p. 8 et seq. for further discussion)

	Category	Code	Distinct Courses	Possibly Overlapping
Humanities & Arts	Intro Discip	IH	2	
	Topical	T	1	
Social Sciences	Intro Discip	IS	2	
	Topical	T	1	
Natural Sciences & Engineering	Intro Discip	IN	2	
	Topical	T	1	
Writing	Composition	C1&C2	1	1
	Writing-Int	W		1
Math	Quantitative	Q		1
Other	Ethnic / Non-Western	E		1
	Arts	A		1
Total (= 10-15)			10	5

Note: background materials to this report can be found on our General Education web site, http://senate.ucsc.edu/cep/GenEdReformIndex.html.

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General Education Reform at UCSC

1. Introduction

What is general education for? The most obvious answer is "breadth" or "well roundedness". Through the GE curriculum, students are exposed to diverse fields and ways of thinking. This is meant to broaden their minds, and more practically, it can help students explore possible majors. Besides breadth in subject areas, GE can play an important role in imparting skills and habits of thinking; our writing and quantitative requirements are the most salient examples of this. Aspects of a general education curriculum should also contribute to retention, and a sense of institutional (or college) identity. Overall, we hope that general education contributes to making our graduates wiser and better equipped to function in an increasingly globalized, fast-changing world. Seen from this perspective, general education is also about preparing students for lifelong learning.

For more than two years the Committee on Educational Policy has been studying UCSC's general education curriculum and considering ways it might be reformed. When we talk about this to faculty, students, administrators, and staff, we see a range of reactions. Some are enthusiastic or supportive; others are wary or disengaged. At least from a distance, general education requirements seem to have all the glamour of tax code. General education (GE) courses can be seen by students as courses to "get out of the way"; some faculty may feel the same way about teaching them. A few faculty have suggested we eliminate general education requirements altogether, noting that European universities do without them. We don't think this is the way to go, and we hope that this proposal points up some of the positive potential of general education.

It is well known that discussions of general education requirements can sometimes be distorted into arguments about the distribution of resources. In approaching general education reform we have tried to avoid being naive about resource realities, divisional concerns, and the like; but we have always placed educational questions first. Apart from the governing educational questions, we have been guided by a few general principles that are worth stating:

• Our General Education requirements should be easy for students and their advisors to understand.
• They should burden students and constrain their choices as little as possible while meeting UCSC's educational goals.
• They should be interesting.
• They should benefit from what we have learned about best practices in general education since our last major reform, and from our faculty and student feedback.
• They should have a clear vision and rationale.

While working on these issues we have drawn on many sources of information. We have read some of the relevant literature on best practices in general education.[1] We have learned about the GE programs at our sister UC campuses, and we have also

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[1] See suggested readings at the end of this document.

studied well known examples of GE reform at other universities. CEP members have attended national conferences on general education. CEP members have visited every department on campus to learn what faculty think the goals of a GE curriculum should be, and to air preliminary ideas. We have met with the Council of Provosts, the Council of Preceptors, and with the Writing Program leadership to discuss aspects of our proposal. We have met with student government representatives of every college, and we devised a questionnaire on general education that students answered when they voted online in campus elections last year. We have consulted with the EVC, the Senate Executive Committee, and the Committee on Planning and Budget. Finally, the helpfully varied make-up of CEP itself should be mentioned. The weekly attendees of CEP meetings include not only senate faculty members, the Registrar, two undergraduate student representatives, and the CEP analyst, but also representatives of the Council of Provosts and Council of Preceptors, a non-senate faculty representative, and (attending as guests) the Acting Director of Admissions, the Associate Registrar, the campus Articulation Officer, and the campus Vice Provost and Dean of Undergraduate Education. CEP has especially benefited from input of the campus VPDUE on matters of general education.

Last Spring CEP presented the campus with a "pre-proposal", with the goal of triggering a second, more concrete, round of discussions of general education at UCSC. This led to discussions at the Spring 2008 Senate meeting and at meetings between CEP members and each division in the form of a Council of Chairs meeting. We invited feedback from anyone interested in these issues. Last Fall we held a Forum on General Education, followed up with "brown bag lunches" on the "E" requirement, on topical clusters, and on the remaining general education requirements.

The current proposal comes with proposed legislation on general education addressing (1) and (4) above. Our general education system can be significantly reformed only if faculty vote in favor of new legislation. This proposal attempts to benefit from all that we have learned, though it probably succeeds only partially.

2. Background

Below is a schematic representation of our current GE requirements. These requirements can be divided into several categories, including those that provide subject area "breadth" and those related to certain skills, habits of thinking, and so on.

	Category	Code	Distinct Courses	Possibly Overlapping
Humanities & Arts	Intro Discip	IH	2	
	Topical	T	1	
Social Sciences	Intro Discip	IS	2	
	Topical	T	1	
Natural Sciences & Engineering	Intro Discip	IN	2	
	Topical	T	1	
Writing	Composition	C1&C2	1	1
	Writing-Int	W		1
Math	Quantitative	Q		1
Other	Ethnic / Non-Western	E		1
	Arts	A		1
Total (= 10-15)			10	5

Figure 1: General education program at UC Santa Cruz

In its approach to breadth, our GE system is *distributional*, as are GE systems at most other universities. This means we divide the world of knowledge up into a few categories – here there are three: Humanities and Arts, Social Sciences, and Natural Sciences and Engineering – and require students to choose from a large number of course offerings within each subject area. Such a system might be contrasted with one having a set of *core* requirements, courses that *all* students must take. The advantage of a core curriculum is that students share a common academic experience, and one that might express a vision or provide a strong feeling of institutional identity. UCSC does in fact provide a limited core experience, through our college core courses. These are an important element of our campus's general education curriculum. The core courses as such are not included in Figure 1 because they are within the purview of colleges. However, the C1 or C2 writing requirements are commonly met within the college core courses, and our proposal necessarily touches on them, a point to which we return later.

The advantage of a distributional approach to GE is that it offers students great freedom of choice. And choice is good – students are more invested in learning, and able to explore possible majors, when they can choose their own courses. On the downside, though, because the curriculum is assembled from many unrelated courses, it all too easily lacks any vision or coherence, and might contribute little to a sense of academic or institutional identity. Our proposal preserves the basic distributional idea, but recasts the requirement categories with greater specificity. It also strengthens the purpose of a distributional system by articulating richer educational objectives for GE courses. Finally, a proposed new form of coherent experience is provided by interdisciplinary clusters.

Under the current GE system, within each of the three subject areas students must take three courses, two Introductory (I) and one Topical (T). Here is what the UCSC catalogue says about these two kinds of course:

T: *These courses expose students to introductory-level themes of broad social or intellectual relevance*

I: *These courses introduce a discipline's content, scope, and methodology*

Under "further breadth" are listed two additional GE requirements, one in Arts (A) and one in U.S. Ethnic minorities/non-Western society (E).

A: *These courses provide the exposure to creative or artistic expression necessary for a liberal arts education*

E: *These courses are intended to increase knowledge of ethnic minorities in the United States and non-Western cultures, improve cross-cultural awareness, and explore relationships between ethnicity and other aspects of a liberal arts curriculum*

The Composition (C1, C2) requirements are UCSC's version of a 1st-year writing requirement. These requirements are generally met through the college core course and Writing 2, but the details depend on the level of writing competency of the student in question.

Finally, the catalogue descriptions of the Writing-Intensive (W) and Quantitative (Q) requirements are given here:

W: *Provides instruction and extensive practice in writing applied to a particular subject*

Q: *These courses provide methods for acquiring quantitative reasoning that involve use of advanced algebra, statistics, or calculus*

As Figure 1 indicates, courses can bear more than one GE designation. Specifically, the present system allows a course to bear any of A, E, Q, W, or C1 and simultaneously bear any I or T designation. No course can be both Topical and Introductory, nor can a course bear more than one of the I or T designations. Nothing prohibits overlap within the group A, E, Q, W, C1/C2, but examples of this seem to be rare or nonexistent.

Given possible overlap, the number of courses an entering frosh must take to satisfy all GE requirements ranges between 10 and 15, equivalent to a range of 50-75 credits. (However, a small portion of these may also satisfy major requirements.) This is at a minimum a full academic year's worth of full-time course work.

3. Why reassess?

The various specific reasons for reassessing – and reforming – our GE program are implicit in the following sections. Here we take up the question in a more general way.

Before rushing to talk about reform, we should ask, How do we like our current general education program? What are its goals? Do we think it's accomplishing them? We might similarly ask how clear the goals of our general education program are to our *students*. It is important to ask and answer these questions periodically – even if we decide that our GE program is excellent as it is. And the stakes are high enough for our students, because they may spend roughly a full academic year satisfying GE requirements. Are they getting something good out of it?

The truth is that many faculty do not know in detail what their own university's general education requirements are, let alone whether they are good. There are probably several reasons for this, but one is obvious: the GE curriculum lies outside any discipline. Departments design and mount their own undergraduate major and minor curricula. Because of the disciplinary orientation of faculty, majors tend to be looked after continuously and rather well. In contrast, the general education curriculum belongs to *all* faculty. And like a collectively owned factory, it is in danger of being neglected.

Our general education program has been modified in small ways, but it has not changed fundamentally in 25 years. (This is not for a lack of trying: a serious attempt at reform was narrowly voted down by the faculty senate about ten years ago.) It needs no emphasizing that we might have different answers today than we did in 1984 to questions like "What should students know or be able to do?" or "How can education prepare students for today's world?" Apart from this self-evident point, however, there is a less obvious one: over the last 25 years, across higher education, there has been a great deal of discussion about, and experimentation with, general education. To focus on one important difference: the standards for making the goals of a general education program clear are higher now. Here, for example, is a passage from the 2005 review of UC Santa Cruz by the Western Association of Schools and Colleges (WASC), the agency that accredits this university:

> *It is recommended that the UCSC Committee on Educational Policy consider how it might build its several probes of the curriculum into a University-defined philosophy of general education, with learning outcomes identified across the curriculum that describe and define the educational experience expected of all UCSC undergraduate students.*

The reference to "learning outcomes" reflects a current of thought today in education. Putting aside variation in ideas and terminology – not to mention controversy – we adopt from this thinking a simple idea: for any course or program of study we should be able to state in a clear and public way what its *educational objectives* are; and we should have the means to assess whether those objectives are being met. The point of doing these things is not only to clarify for ourselves what we think we are doing, but to make possible a culture of course proposal and review that is continually informed by our educational objectives. We pursue this point further in the next section.

4. The proposal

Figure 2 shows the system of general education requirements that we propose. It consists of seven required course categories (top rows), one requirement from a

"Perspectives" choice category, and one **two-credit** (minimum) requirement from a "Practice" choice category.

The chart also shows two Composition courses (C1 and C2) and a Disciplinary Communication (DC) requirement. We propose to carry over our current C1 and C2 requirements, while the DC is a new proposal to replace the Writing-Intensive (W) requirement and is discussed in a later section.

		Code	Distinct Courses	Possibly Overlapping
Cross-Cultural Analysis		CC	1	
Ethnicity & Race		ER	1	
Interpreting Arts & Media		IM	1	
Mathematical & Formal Reasoning		MF	1	
Scientific Inquiry		SI	1	
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Writing	Composition	C1&C2	1	1
	Disciplinary Communication	DC	*	
Total (= 9+ to 10+)			9+	1

Figure 2: Proposed general education requirements.

Major differences from current system

The proposed requirements differ in several important ways from our current requirements.

First, they are smaller, both in the number of courses and the number of credits required. Whether the difference is modest or substantial depends on how successful a student might have been under our current system at "overlapping" requirements, that is, finding courses that satisfied more than one requirement at a time. As the chart above shows, depending on the amount of overlap, a student under our current system will take anything from 10 to 15 five-credit courses. Under the proposed system, the range would be from 9+ to 10+ courses, where "+" refers to a two-credit course in the

"Practice" category. In our visits to departments, we found some support for reducing the number of GE requirements, and none for increasing their number. Some faculty find current requirements to be heavier than what is needed on educational grounds. CEP agrees.

Second, the proposed system allows almost no overlap of GE requirements. The one exception is for the college core courses (which provide satisfaction of either C1 or C2, depending on the student). Current practice is to allow core courses to satisfy a general education requirement apart from C1/C2, and we propose to continue this practice. The main reason for this is to provide "incentivization" for students to enroll in college Interdisciplinary Topical Clusters (ITCs). Our hope is to foster the development of ITCs at several colleges (following a model currently being developed at College 8); we think it will be important to students who sign up for clusters that they receive substantial GE credit for them. (For more information, see the section on ITCs below.)

CEP deliberated a great deal over whether to allow overlap of requirements. In the end we were persuaded by two arguments against overlap. The first, made by many faculty, is that overlap leads to a perversion of the educational goals of GE. Because students are under pressure to finish GE requirements, their choices of class can be based not on interests or educational goals but on calculations about which course will "get the most requirements out of the way". In a similar vein, faculty can be tempted to design and offer courses with multiple designations not due to educational convictions but to attract student enrollments.

The second argument against overlap comes from our concern that courses should focus in a deep and sustained way on the educational goals of a given objective, and that when objectives are allowed to combine they will often each be diluted in the meeting. Of course this does not have to be the case, and one could reasonably argue that combining some requirements could lead to an educational synergy. This is a real consideration, but CEP was more persuaded by arguments against overlap.

The third major difference between the proposed requirements and the existing ones is that we have eliminated the distinction between "Topical" and "Introductory" courses. In the view of many faculty, this distinction is not as successful at meeting its intended goals as it might have been. Roughly speaking (and acknowledging possible differences of opinion), Topical courses are meant to i) be organized around a topic or theme of importance to society rather than around a discipline, and ii) be interdisciplinary, if possible. CEP believes that these goals are praiseworthy, and that they can be better met in other ways. For example, we have proposed that the campus try to meet them in part by means of the Interdisciplinary Topical Clusters. Furthermore, we will encourage faculty to structure *any* GE course around topical themes if they wish to. Many, if not all, of our GE categories allow for this possibility.

A last general difference between the proposed and existing requirements is possibly the most important: our proposed requirement categories are more specific than our existing ones, and they reflect specific educational goals rather than administrative divisions. There is a tension between specificity on the one hand, and freedom or inclusiveness on the other. In the end we opted for a degree of specificity, because specificity is what makes a set of requirements interesting and distinctive. The trade-off

is that we had to make some difficult choices about what to include or not include. We have endeavored to make choices that best reflect our faculty's vision as we have discerned it over our many consultations.

Characterization of requirements

We find the educational objectives of our current requirements to be unclear. It should be emphasized that this unclarity is not a result of fuzzy thinking on the part of those who put the current system in place. The problem is rather due to realities of time and institutional memory loss. (It is also true that expectations about educational objectives, as evidenced by the WASC quote in the last section, are different today than they were 25 years ago.) The consequences of this unclarity are perhaps most saliently felt by CEP, since CEP is the committee that oversees course approval at the campus level, including approval of GE designations for courses. The fact is that CEP is regularly faced with a proposed designation for a course and is not entirely sure how to make a judgment.

In the spirit of improving on this state of affairs, here are draft descriptions of our proposed GE requirements. The substance of our proposal is really in these draft descriptions, which amount to our statement of the goals and expectations for each category. We urge you to read them and give us your comments. It is important to note that these descriptions are not part of legislation. Instead they constitute draft policy statements, and as such we expect them to change. In fact, even if GE legislation passes these statements could, and probably should, evolve over time, depending on the views of CEP and of faculty who discuss them with CEP.

Draft educational goals for GE requirements:

Cross-Cultural Analysis
Courses in Cross-Cultural Analysis aim to prepare students for a world that is becoming a global village, with increased interaction and integration among peoples, companies, and governments. These courses aim to encourage a broader and deeper understanding of cultures and societies outside the United States. Such courses might focus on an in-depth examination of one culture, or one aspect of such culture (e.g., art, music, history, language). Alternatively, these courses might aim to help students develop skills of cross-cultural comparison and analysis. A third option is courses that explore topics that are inherently cross-cultural such as international relations or the processes of economic globalization. Whatever the approach, these courses all aim to help students develop the openness and sensitivity necessary for cross-cultural understanding. Although themes of privilege and oppression are centrally relevant to the history and current experience of many cultures, such themes may, but are not required to be, addressed in cross-cultural awareness courses.

Ethnicity and Race
Courses in Ethnicity and Race aim to prepare students for a state and a world which are increasingly multi-ethnic and multi-racial. Beyond familiarizing students with the culture and/or history of one or more ethnic or racial groups, these courses also aim to develop theoretical and practical understanding of questions such as (but not limited to): how categories of ethnicity and race are constructed; the role they can play in identity formation; how ethnicity and race have historically been used to justify forms of enforced inequality; and the contributions of people of various ethnicities to society and to political change. These courses are particularly concerned with how ethnicity and race may intersect with other categories, such as gender, class, or sexual orientation, to shape self-understanding and patterns of human interaction. While such courses may often adopt an historical perspective on the issues they consider, they will address discrimination based on ethnicity or race as an ongoing problem whose resolution remains an unfinished social task.

Interpreting Arts and Media
Contemporary life bombards us with visual and auditory media, often in the form of advertising or advocacy. Interpreting Arts and Media courses explore the complex ways in which information of all kinds is represented by visual, auditory, or kinesthetic means, or through performance. They build in-depth understanding of one or more forms of artistic media: that is, media in which non-textual materials play primary roles. They offer skills in the practice, analysis, interpretation and/or history of one or more of these media, as well as the ability to analyze the means by which they encode and convey information.

Mathematical and Formal Reasoning
Disciplines such as mathematics, logic, and computer programming teach us to think with rigor and precision. In a world in which much thinking and discourse is directed by emotion and association, formal or mathematical models teach the value of dispassionate analysis. Courses in this category emphasize the development of mathematical, logical, and/or formal reasoning skills. Mathematics-based courses presuppose UC-level mathematics preparation, are focused on teaching significant problem solving skills, and are often oriented towards particular application areas. Other courses satisfying this requirement train students in formal reasoning skills and/or in the construction and use of formal models. Formal reasoning domains include mathematical proof, logic, and applied logic. Some examples of formal models are: computer programming languages, generative grammars (from linguistics), supply and demand models, and formal music theory.

Scientific Inquiry
Courses in Scientific Inquiry teach students about the essential role of observation, hypothesis, experimentation and measurement in the natural sciences. Students should acquire key concepts, facts, and theories relevant to living systems and/or the physical universe; by the end of the course they should also be able to articulate an understanding of the value of scientific thinking in relation to issues of societal importance.

Statistical Reasoning
In today's globalized, media-saturated information society, we are continually presented with – or asked to present – numerical data. With their emphasis on classical mathematics, our schools may not do enough to prepare students to interpret quantitative claims and make judgments in situations of statistical uncertainty. The goal of statistical reasoning courses is to teach skills for effective reasoning about probability and the use of quantitative information. Students acquire an understanding of making informed decisions in the presence of uncertainty. Possible topics also include ways of (mis)representing data; correlation vs. causation; statistical inferences; experimental design and data analysis; understanding orders of magnitude.

Textual Analysis and Interpretation
Even in our current multi-media world, the written word remains a major vehicle of communication. Many fields, from literature and history to law, government, and religion, depend heavily upon the understanding and interpretation of written documents. Textual Analysis and Interpretation courses have as their primary methodology the interpretation or analysis of texts. The aim of these courses is to develop higher-order reading skills and to train students how to read attentively, to think critically and analytically, to produce and evaluate interpretations, to assess evidence, and to deploy it effectively in their own work. These abilities are not only necessary for academic success, but also for full participation in civic life at every level.

Environmental Awareness
The interactions between people and the earth's environments are subtle, complex, and influenced by a variety of natural, scientific, economic, cultural, and political factors. Courses satisfying the Environmental Awareness requirement teach students about the complexity of particular ecosystems and/or people's interactions with nature so that they will better understand the environmental issues and trade-offs that are likely to arise in their lifetimes. Courses deal with one or more of the following topics: the study of particular ecosystems or environments; natural forces, processes, and their effect on ecosystems; climates, climate models, and climate change; evolution and adaptation to the environment; bio-diversity and/or the robustness of nature and its feedback mechanisms; how cultures relate to their natural environments; human efforts to create, preserve, and modify environments; management of natural resources (such as fossil fuels, forests, and fisheries); issues of sustainability (such as sustainable agriculture or renewable energy); pollution and its effect on ecosystems; ecological impacts of non-native species and other ecological disasters.

Human Behavior
Courses in human behavior help students to prepare for a world in which many of the most pressing challenges (such as genocide, environmental degradation, poverty) are impacted by human thoughts, decisions, or practices. As well, they provide a kind of "owner's manual" for students to assist them in understanding themselves, their roles (for example, parent, partner, leader), and their social groups (family, workplace, neighborhood, nation). These courses impart specific knowledge about some aspect of individual human behavior or the operation of human groups. As well, they are likely to provide an introduction to one or more specific methodologies, such as ethnography, longitudinal analysis, or experimentation. A central aim, however, is to help students appreciate that better solutions to problems (whether global or personal) can often be found by incorporating information about how humans think, feel, and act.

Technology and Society
Imparting a basic understanding of the dynamic technological society in which we live is an essential goal of academic institutions. The study of technology helps satisfy the need of society for knowledgeable people able to understand, participate in, and guide the rapid technological advances that play such a vital role in our world. Technology and Society courses focus on understanding technological advances, how they are developed, and their impacts on society.

Collaborative Endeavor
Students learn and practice strategies and techniques for working effectively in pairs or larger groups to produce a finished product. For example, students might learn specialized practical information such as how to use change-management software to monitor and manage changes initiated by multiple group members. Alternatively, they might learn basic information about leadership, teamwork, and group functioning, which they can incorporate into their own group process. What is common to all courses is that some instruction regarding the process of collaboration is provided, in addition to instruction specific to the academic discipline and the products being produced.

Creative Process
Creative Process (CP) courses teach creative process and techniques in a context of individual or collaborative participation in the arts, including creative writing. Courses may combine theory and experiment in the creation of a new artwork, or new interpretation(s) of an existing artwork. CP courses include studies in individual or group creativity or improvisation, and/or ensemble rehearsal and performance. Students who elect to satisfy the CP requirement will take at least two credits of individual or group creative work. CP may be satisfied within courses of greater than two credits. Where appropriate, sponsoring units may require a sequence of two or three 2-credit courses, with the CP designation assigned to the final quarter.

Service Learning
Service learning courses provide students with an opportunity to integrate their academic coursework with community involvement. Such courses provide supervised learning experiences where students reflect on, communicate, and integrate principles and theories from the classroom in real-world settings. Students gain valuable practical skills while giving back to the community.

5. About a foreign language requirement

In our visits to departments we found surprisingly broad support for a foreign language requirement at UC Santa Cruz. At the same time, faculty understand that a language requirement might be infeasible for resource reasons: language classes must be small to be effective, but the number of language instructors is limited.

Many faculty point out that we are the only UC campus without a foreign language requirement.[2] However, faculty may not always know how modest the foreign language requirement is at other UC campuses. The requirement is generally that students demonstrate competency at a level equivalent to our third quarter language courses (e.g., Spanish 3). They do this by passing the relevant course, testing out of it, or getting a high enough score on the Advanced Placement Exam. In other words, students must have the equivalent of one year's worth of college foreign language. Of course, many students can satisfy this requirement without taking a course at the university.

In the current budget climate, and without better understanding the potential effects on resources of imposing a language requirement, CEP did not feel it could propose such a requirement.

6. Interdisciplinary topical clusters

Choice and vision

As we have seen, our proposed requirement categories are more specific than categories like the existing "Humanities and Arts" or "Social Sciences" categories. We hope that this gives general education a stronger sense of vision and identity. Our requirement categories are nevertheless still distributional categories. The freedom and choice offered by a distributional system is good, but in some respects distributional systems can leave something to be desired. Because no course chosen relates to any other course chosen, a student's GE curriculum usually lacks any coherence or unifying vision.

One answer to this lack of vision is the concept of a *core*, a curriculum that all students must take. The core curriculum in our colleges is the local example, though for most colleges core lasts only one quarter. A core curriculum brings another potential advantage too that is well known to UCSC: the creation of a community of learning. We return to this below.

CEP is considering more than one way to bring more coherence or vision to GE. One we have already seen, and it involves better articulating the educational goals of GE and putting in place better mechanisms of oversight of the curriculum.

Here we propose another idea to bring more coherence to general education.

Topical courses

One of our current GE categories is the Topical (T) designation. There are a few properties many faculty agree an ideal Topical should have: i) As the name suggests, it should focus on a topic or question that is of some import; it should deal with "big questions". ii) It should be genuinely interdisciplinary, approaching its topic from several disciplinary and/or methodological perspectives. This is of course a tall order.

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[2] This is not entirely true. Not all colleges at UC San Diego require a foreign language, for example.

iii) It should be broadly accessible (normally interpreted as "no prerequisites") and it should perhaps be self-contained ("not prerequisite to anything").

As others have noted before us, there are many T-designated courses that fall short of one or more of these expectations, and few meet all of them. There are many reasons for this, including a) unclarity of GE educational objectives, b) the temptation for departments to offer T courses for both majors and non-majors at the same time, and c) the division of T courses into categories like TH (Humanities) and TN (Natural Sciences/Engineering), a fact that builds in disciplinary barriers.

Interdisciplinary topical clusters

CEP proposes using GE courses to create "interdisciplinary topical clusters" of two or more courses. Each cluster would be defined by attention to a specific issue or question of importance to society. No cluster would be attached to any division, let alone department; by design clusters would have to be genuinely interdisciplinary. By their very nature these course clusters could not serve only the needs of discipline-based majors. Nor would they resemble "mini-minors", because they would be by design *inter*-disciplinary and would focus on a topic or question, *not* a field or methodology.

A cluster would not be an additional set of required courses. Rather, the courses of a cluster would themselves satisfy GE requirements. Each course in a cluster should normally belong to a different GE category – this is the best way to ensure a multi-disciplinary perspective on a topic – but this might not be required so long as courses themselves or the sequence overall were sufficiently interdisciplinary.

Establishing *clusters* instead of individual T courses is a means of bringing some larger vision and coherence into general education. The faculty who design these clusters would have to work together to ensure that each course fit well into one overall vision and that educational objectives of later courses built on outcomes of earlier ones. A mechanism of oversight, and the possibility of retiring clusters and inventing new ones, would have to be in place.

A clustered curriculum has benefits beyond purely academic ones. Clusters would create learning communities within UCSC, and one might hope for the sort of benefits to institutional identity, retention, and educational success that such learning communities can foster.[3] Indeed, in a well known cross-institutional study of college learning outcomes, Astin (1993:425) concluded that a "true-core interdisciplinary approach to general education, in which all students are required to take precisely the same set of courses" was the *only* design feature of general education that stood out in positively affecting many of the learning outcomes. Astin speculates that "the beneficial outcomes of a true-core curriculum may be mediated by the peer group: having students take exactly the same general education courses provides a common experience that can stimulate student discussion outside class and facilitate the formation of strong bonds among student peers."

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[3] We recommend Tinto (1993) for a set of "Principles of Effective Retention".

Given time and logistical realities, we would probably not want to require clusters, at least at first. Rather, groups of faculty or departments would be encouraged to create them, and students would be encouraged to take them.

The idea of interdisciplinary topical clusters fits well with the following recommendation of the University of California Commission on General Education in the 21st Century:[4]

> *As one alternative to the "cafeteria approach" to general education, in which students choose a set of core courses from an unwieldy list of general education courses, campuses should develop a discrete number of thematic, interdisciplinary bundles or sequences of courses around substantive and timely topics...Students could select any given thematic package voluntarily, but once selected, all of its constituent parts would be required.*

Clusters and colleges

The proposed clusters would be trying to accomplish many of the very same goals that colleges try to accomplish: they would represent a kind of core curriculum built on a theme with the intent of fostering identity and community. As a separate proposal, we see great appeal in the idea of linking a cluster to a specific college. Clusters could work as learning communities with or without college affiliation. But to establish them entirely independently of colleges might be missing an opportunity – the chance of fusing *learning* and *residential* communities – that is unique to UC Santa Cruz.

The idea is simple: imagine a cluster of several GE courses, from various departments and divisions, for example on the theme of *sustainability*. Suppose this cluster were linked to College 8. (College 8 is currently developing such a cluster, in partnership with the departments of Earth and Planetary Sciences, Ecology and Evolutionary Biology, and Electrical Engineering.) College 8 students would be required to take this cluster, at least by default.[5] Yet the courses of a cluster would be mounted by departments, just as GE courses usually are. Student FTE for teaching these courses would still accrue to the departments, as it does now. General education courses are already funded, so there are no obvious general resource implications to the proposal. Furthermore, here is a way to involve ladder-rank or other long-term faculty in the academic life of a college without the familiar and intractable problem of involving them in existing core courses.

Clusters, college core courses, and writing

If we link a cluster to a college, it can remain independent of that college's core course(s). However, it is also possible to harness clusters to work *with* existing core courses, or to have them do some of the work *of* core courses. Colleges, working with

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[4] See references.

[5] In its first, pilot, year, the College 8 cluster is expected to serve 150-200 students. It remains to be seen whether all students of a college could realistically participate in the same cluster, or whether we would need more than one cluster to accommodate students of a college. We might also consider building clusters of, say, five courses and requiring students to take, say, three out of five.

departments, could conceivably build a much more ambitious academic curriculum for college students than is possible within the confines of the core course. A serious, and independent, reason for considering this idea involves the implications it might have for training in writing, a matter of great concern to our faculty.

Our college core courses try to accomplish two goals (among others): First, they address the need to provide our students with their first quarter of frosh composition. Second, they impart the college core curriculum, which has academic worth as well as (we hope) effects of community, retention, identity, etc. Both goals are important, and ten weeks is a very short time to do these two things. We note that if a college were to adopt an interdisciplinary topical cluster, it might find itself in a much better position to accomplish these goals. The reason is that a topical cluster would provide much more "room" within which to present a content-based curriculum – **leaving more "room" in the currently existing core courses to focus on writing.**

Finally, it is possible even to formally *link* a course in the cluster with the college core course, with the latter understood as primarily a writing course: students would take them concurrently, and their curricula and delivery would be synchronized. Though the cluster course (a GE course) would probably be large, the linked core/writing course would be capped at 20-25 students, just as it is now. Because core courses are already delivered with these enrollments, there is no new funding needed to make this happen. Linking courses in this way would take a great deal of cooperation between Provosts, core instructors, and departmental faculty. The idea can work only if core instructors retain their prerogative to design, assign, and evaluate curriculum; core courses could not be seen as sections of the lecture course.

A challenge for this idea of linking is that many students cannot fit 10 units of core/writing + GE course into their schedule in a given quarter. A possible solution would be to make the GE course a 3- rather than a 5-unit course, with some students taking 18 (or 13) credits in the relevant quarter instead of 15.

7. Writing

CEP has already presented a detailed report to the senate on the status of writing at UC Santa Cruz, to which we refer the reader for background on this topic.[6] Here we focus on major points and recommendations.

Our visits to departments revealed that there is very strong and virtually universal support for strengthening writing at UC Santa Cruz. In fact, this was the only really unanimous sentiment across faculty.

Figure 4 shows the current set of writing requirements. The distribution of these requirements reflects an important desideratum for writing: it should be nurtured continuously.

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[6] See "Resolution on Writing Intensive" at our general education web site, at http://senate.ucsc.edu/cep/GenEdReformIndex.html.

Requirement	When taken	How taken[7]
C1 (Composition)	1st year	Usually college core course
C2 (Composition)	Before 7th quarter	Usually Writing 2; sometimes core
W (Writing-intensive)	After C2; usually upper division	A course in some discipline

Figure 4: Writing requirements at UC Santa Cruz

Our recommendations regarding writing focus on the college core courses and W requirement.

Frosh writing

Several years ago, when we instituted the C1 and C2 designations, the campus strongly underscored the role of the college core courses as "frosh composition" courses. Most sections of college core courses satisfy the C1 requirement. (Some satisfy C2, see note 7.) The educational objectives for C1 require that students write at least five "relatively short essays (up to 1250 words)" and focus on various aspects of their writing (including revision), reading, and critical thinking. Is there more we can do to strengthen the focus on writing in core?

We have already suggested one way in section 7: we invite colleges to take advantage of the interdisciplinary topical cluster idea to shift some of the burden of their academic/thematic curriculum out of core and let core focus more intensively on writing.

Our second recommendation concerns core course faculty hiring and oversight. Some colleges can boast of a stable and dedicated cadre of talented writing instructors teaching core. Other colleges struggle more to find and keep good writing instructors. Currently the hiring, mentoring, and reviewing of core course instructors does not require the active participation of Writing Program faculty. CEP strongly recommends that Writing Program faculty within the colleges play a central part in the hiring, mentoring, and reviewing of core course instructors.

Disciplinary communication

A year ago the senate passed the following resolution in a unanimous vote:

WHEREAS

- The ability to write effectively is fundamental to a university education;
- Writing is a complex skill that must be nurtured beyond frosh year;

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[7] The reason for the "usually"s is that students come in with different levels of preparedness in writing. More prepared students may satisfy C2 already in the context of the core course.

- Writing in a discipline promotes a deeper understanding of the substance of that discipline;
- Effective evaluation of and feedback about writing puts a special demand on evaluator-to-student ratios and therefore on resources;
- The current capacity shortfall in W offerings at UCSC places an unacceptable burden on students, advisors, and faculty;
- This problem of capacity cannot be addressed without an increase in resources devoted to W, unless the quality or meaning of W is to be eroded;

THEREFORE BE IT RESOLVED that the Senate calls on the administration to work with departments and with the senate to find a solution to the W crisis, and to allocate the funding needed for it.

Last year's report on writing (see note 6) details the pedagogical and logistical failings of our current Writing-Intensive (W) requirement, which we do not repeat here. The following proposals are meant to address these shortcomings.

> 1. We propose that every major-sponsoring unit explicitly articulate its discipline-specific expectations in writing and other forms of communication, and ensure that these goals are met in the requirements of the major.

This Disciplinary Communication (DC) requirement that we envision would differ from W in several crucial ways. First, it would not need to be satisfied in the context of a *single* course. Instead it could be met by means of *several* courses, each of which contributes a part to the overall goal. This serves both to make the task more feasible and attractive to faculty and to spread practice in writing into more of the curriculum. Second, though the requirement would still focus mainly on writing, some leeway in the amount of writing would be allowed for departments that value other forms of disciplinary communication for their majors, e.g. poster and oral presentations. Finally, it is explicitly a requirement of *majors* and therefore of their sponsoring departments to see that the DC educational objectives for their majors are met. Though departments would be expected to take on this responsibility, they would also be given a significant say in what exactly the requirements *mean* for their majors.

We cannot ensure the success of the DC requirement without significant resource support for writing in the disciplines. Here we basically echo our recommendations of two years ago:

> 2. We propose that the campus a) re-establish a peer tutoring program in writing; b) re-establish funding to support a full-time coordinator of writing in the disciplines; c) provide concomitant staff support; and d) devote resources where appropriate to make meeting disciplinary communication objectives feasible in every discipline.

CEP will continue to collaborate with CPB in order to determine the likely cost of these measures.

Some readings on general education

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Tinto, Vincent. 1993. *Leaving college: rethinking the causes and cures of student attrition.* Chicago University Press.

General Education in the 21st Century. Report of the UC Commission on General Education in the 21st Century, Center for Studies in Higher Education, UC Berkeley.

Duke University's Curriculum 2000 Report:
http://www.aas.duke.edu/admin/curriculum2000/report.html

General education page of the Association of American Colleges and Universities (AAC&U): http://www.aacu.org/resources/generaleducation/index.cfm