

COMMITTEE ON EDUCATIONAL POLICY
General Education Reform at UCSC - Pre-proposal for Campus Discussion

To the Academic Senate, Santa Cruz Division:

Summary of Proposals

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 1-3 address this need.

1. Frosh writing. Currently, college core courses (capped at 22-25 students each, funded for all frosh) do double-duty as beginning frosh writing courses and as a forum for delivering a college's thematic/academic curriculum. We propose to the colleges that they make training in college-level writing the *primary* mission of the core courses. Core courses would continue to be followed by Writing 2, as they are now, so that the current C1-C2 requirement would remain in place. More substantively, we propose to make it significantly easier for core courses to focus on writing by means of proposal 8 below.

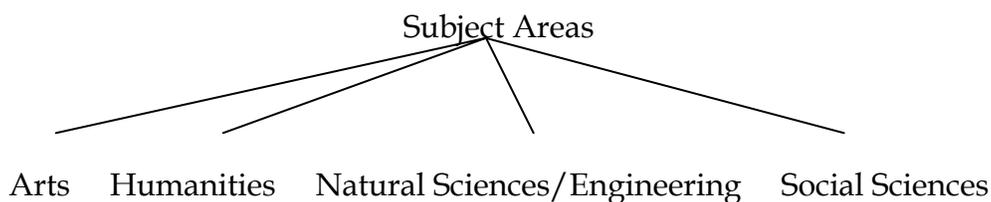
2. Disciplinary communication. We propose that every major-sponsoring unit explicitly articulate its discipline-specific expectations in writing and other forms of communication, and ensure that these goals are met by the requirements of the major. CEP would set minimum standards concerning the amount 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.

3. Writing support. 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.

Breadth, Ways of Learning, and the Matrix

A central goal of general education is to promote lifelong learning by ensuring exposure to a range of disciplines and subject areas. Other general education requirements might be grouped broadly under the heading "Ways of Learning". The educational objectives of the latter requirements are to various extents independent of subject area. While writing might well be considered part of this group, we treated it separately above.

4. Breadth categories. We propose a distributional Breadth requirement employing the four subject areas named below. Students would take *one* course from the Arts subject area and *two* courses from each of the other subject areas. (Currently, students must take two Introductory (I) courses and one Topical (T) course from each of three subject areas, for a total of nine courses.) Students would *not* be formally required to take general education courses within a subject area if their major is within that area. Students would therefore normally take five-six breadth courses (outside of their major). There would no longer be a formal distinction between I and T courses (but see 7 below).



5. Ways of learning categories. The campus requires more discussion of Ways of Learning categories. Under the current proposal, these requirements would not entail more courses but would be met *within the breadth component itself* (see 6 below). Given the feedback we've received from faculty so far, we find broad support for two or three categories:

- Quantitative and/or formal reasoning (similar to current Q).
- Cross-cultural understanding (similar to current E).
- Race, ethnicity, and gender (similar to current E).

We suggest these others for further discussion:

- Critical thinking.
- Creative endeavor.
- Statistical reasoning/data interpretation (as a specific requirement separate from Q).
- Science, technology, and society.
- Environmental understanding.

6. The Matrix. To give more depth, rigor, and purpose to breadth courses, and to general education overall, we propose that every course satisfying a breadth requirement simultaneously satisfy one of the Ways of Learning requirements, according to a scheme we might call the Matrix:

<i>The Matrix</i>		<i>Ways of Learning</i>					# Required
		Quantitative	Cross-cultural	
<i>Breadth</i>	Arts						1
	Humanities						2
	Natural Sciences/Engineering						2
	Social Sciences						2

Each cell in this scheme would correspond to a possible general education course (though some combinations may be more likely than others). According to the proposal, every breadth course *would have to* occupy some cell in this sense.

Interdisciplinary topical clusters

7. 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 a portion of the general education requirements could be met through *interdisciplinary topical clusters*. An interdisciplinary cluster would be a sequence of two (or more) courses focused on a topic of significance to society. Each course would belong to a different subject area (in the sense of 4 above), and each would satisfy a portion of the GE requirements. The focus would be not on any discipline but on a set of *problems* or *issues*. A cluster would therefore be inherently multidisciplinary, allowing students to see how one issue or problem can be analyzed according to several methodologies and perspectives. Creating good clusters would require significant collaboration across departments and divisions, a good thing in itself.

8. College affiliation. As a separate matter, we propose that any interdisciplinary topical cluster could target students of a *specific college*. For example, there might 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

Perhaps the most important outcome of general education reform would be not in the decisions we make about specific subject areas, ways of learning, etc., but in the culture and the mechanisms we put into place that contribute to continuous reflection about how well it works. Proposals 9-11 address this meta-issue.

9. 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.

10. Committee on Course Approval. We propose to follow several of our sister campuses in establishing a Senate Committee on Course Approval distinct from the Committee on Educational Policy. The committee would assume CEP's duties of approving and reviewing courses, and a central aspect of this job would be overseeing general education. Given the significant workload increases implied by these tasks, we believe that only a new committee dedicated to them would be likely to succeed in realizing the goals of proposal 9.

11. Administrative Authority. Though a University collectively affirms value in general education, it is a fact of life that departments are often more invested in their major and minor curricula. Divisions, in turn, are naturally most responsive to the perceived needs of their departments. A consequence of these facts is that the needs of general education sometimes take a back seat to those of other programs. One means of addressing this potential problem is to place resources for general education in the hands of a central administrative authority. For example, resources for college core courses--one component of UCSC's general education program--are administered by the Vice Provost and Dean of Undergraduate Education. We propose, as part of the reform process, that the campus have a conversation about the best means of providing administrative and budgetary oversight of all aspects of general education.

Snapshot of current requirements

(See p. 10 et seq. for further discussion)

Academic Emphasis		Category	Code	Distinct Courses	Possibly Overlapping
Breadth	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	
Other	Ethnic	E		1	
	Art	A		1	
Ways of Learning	Writing	Composition	C1&C2	1	1
		Writing-Int	W		1
	Math	Quantitative	Q		1
Total (=10-15)				10	5

Snapshot of proposed requirements

1. Writing:
 - a. C1 & C2 as currently required
Writing is the *primary* focus of C1
 - b. *Disciplinary Communication*: majors articulate and meet discipline-specific objectives for communication, subject to general criteria set by CEP.

2. Breadth and Ways of Learning

<i>The Matrix</i>		<i>Ways of Learning</i>					# Required
		Quantitative	Cross-cultural	
<i>Breadth</i>	Arts						1
	Humanities						2
	Natural Sciences/Engineering						2
	Social Sciences						2

3. Interdisciplinary topical clusters:

Multidisciplinary sequence of general education courses focused on a particular problem or topic. A cluster is possibly associated with a specific college. Clusters contribute to satisfying requirements from (2) above.

Note: background materials to this report, including CEP's report and Resolution on writing from academic year 2006-07, 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 a year the Committee on Educational Policy (CEP) 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 perverted 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 might be worth stating:

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

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 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 are currently meeting with student government representatives of every college, and we have devised a questionnaire on general education that students can answer when they vote online in campus elections this quarter. We have consulted with the Campus Provost/Executive Vice Chancellor (CP/EVC), the Senate Executive Committee, and the Committee on Planning and Budget (CPB). 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, an Associate Registrar, the campus Articulation Officer, and the campus Vice Provost and Dean of Undergraduate Education (VPDUE). CEP has especially benefited from input of the campus VPDUE on matters of general education.

This draft proposal attempts to benefit from all that we have learned, though it probably succeeds only partially. In offering this draft, our goal is to trigger a second, more concrete, round of discussions of general education at UCSC, including 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 invite anyone who is interested in these issues to discuss this proposal with us. Based on further feedback received between now and mid-fall, in collaboration with the Committee on Planning and Budget, we will present the campus with a revised proposal at the fall 2008 Senate meeting. The revised proposal will come with proposed legislation on general education. Our general education system can be significantly reformed only if faculty vote in favor of new legislation.

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, called “ways of learning” here.

¹ See suggested readings on p. 28.

Academic Emphasis		Category	Code	Distinct Courses	Possibly Overlapping
Breadth	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	
Other	Ethnic	E		1	
	Art	A		1	
Ways of Learning	Writing	Composition	C1&C2	1	1
		Writing-Int	W		1
	Math	Quantitative	Q		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 will preserve in pared-down form the basic distributional idea, but will balance this against a proposed new form of coherent experience provided by interdisciplinary clusters. It will also try to strengthen the purpose of a distributional system by articulating richer educational objectives for breadth courses.

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 freshman writing requirement. The 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 the great variation in ideas and terminology, this thinking might be distilled to the following: for any course or program of study we should be able to state in a clear, detailed, and public way what its *educational objectives* are; we might further articulate concrete *learning outcomes* which we can use 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. Breadth and educational objectives

Though the cultivation of academic breadth is an essential aim of general education, the goals and the precise content of “breadth” are not always well defined. On the one hand, faculty generally agree that exposure to different disciplines or methodologies is important. On the other hand, faculty often cannot agree on much else. These two facts together virtually guarantee a system that is distributional, as ours is: breadth is forced by the existence of very broad subject areas from which students must sample, but within a subject area students have nearly unlimited choice.

Figure 2 shows the subject areas of our current GE system, and those that CEP proposes. The figure also shows how many courses students are required to take within each subject area. In both cases the subject areas are obviously reminiscent of existing academic divisions. It is important to keep in mind, however, that whether a course belongs to a certain subject area or not is determined by its content and not by the administrative home of its sponsor. This would remain true under the proposed system. One can get a sense of the extent to which subject areas diverge from divisional sponsorship (or not) by looking over the [courses that satisfy GE requirements](#) online.

Our current requirements specify two Introductory (I) and one Topical (T) course per subject area (see Figure 1 above), for an initial total of nine courses. Since the Arts (A) requirement is essentially a further breadth requirement, Figure 2 adds it to the current Humanities/ Arts total, giving ten breadth courses in all under the current system. Under the proposed system, students would be required to take only seven breadth courses, distributed as shown. Furthermore, we propose to eliminate the distinction between I and T courses. This leaves us with only one needed designation, B (for “breadth”).

Current			Proposed		
Subject area	Code	# courses	Subject area	Code	# courses
Humanities/ Arts	IH/A, T	4	Arts	B	1
Natural Sciences/ Engineering	IN, T	3	Humanities	B	2
Social Sciences	IS, T	3	Natural Sciences/ Engineering	B	2 ²
			Social Sciences	B	2
Total		10	Total		7

Figure 2: Subject areas, codes and number of required courses per subject area, current and proposed.

The substantive points here involve i) the number of courses required overall, and ii) the way that subject areas are defined.

Number of courses required

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. Notice that the extra substance found in the current breadth requirements comes from the existence of T courses distinct from I courses. As the distinction implies, T courses were not meant to be merely more breadth. Rather, what made the T designation interesting was the promise of a) approaching a problem or issue that is of *importance to society*, and b) doing so *from a multidisciplinary perspective*. It was recognized already by the previous GE reform attempt (in the late 1990s) that T courses have not succeeded as well as might be hoped in meeting these promises. We think the goals of the Topical designation are as important today as ever, but we think they are much more likely to be well met by means of the interdisciplinary topical cluster idea (proposed later). As we will see, clusters are built out of B courses themselves; their value lies in how B courses are *organized*, not in their being an add-on to breadth.

In contrast to current requirements, we propose that a student be formally required to take Breadth courses only in areas outside of her major(s). A student majoring in a field of engineering, for example, would be formally required to take Breadth courses only in the Arts, Humanities, and Social Sciences areas. This makes sense if the point of breadth is to expose students to disciplines and methodologies outside of their chosen ones. Of course, it may happen that introductory courses in a student's field happen to double as Breadth courses too, as they often do now. But suppose a department wants to design a Breadth course specifically for non-majors. There are arguable pedagogical benefits of

² Some Universities, such as Harvard and UC Berkeley, make a distinction between biological and physical sciences, requiring both.

doing this--see the description of *Overview* courses below. Under the current system there is actually some disincentive to doing it. This is because departments know that their majors must satisfy breadth requirements in their own subject area and that the most efficient way to do this is by having major requirements satisfy breadth too.

Characterization of subject areas

The second substantive issue, the proposed subject areas, may seem straightforward, but it is in a sense much more difficult. To see why, consider the treatment of Arts and Humanities under the two systems. According to current policy, an Arts (A) course must be focused on the arts, a Humanities/ Arts Topical can be focused either on the arts or the humanities, and at most one of the IH courses can be focused on the arts.³ The net effect of all of this is that a student can take as many as three courses with an arts focus and as few as one with a humanities focus; she can do the reverse; or she can take two of each kind.

The proposed system makes a formal distinction between Humanities and Arts. But as we just saw, our current system also does this with the A designation separate from IH and with the restriction on IH. We propose only one Arts course in contrast to two Humanities courses. However, what this means for divisions and departments depends on precisely *what we mean* by a "BA" (Arts Breadth) and a "BH" (Humanities Breadth) course. For example, if BH were to mean roughly what IH seems to mean currently, then a student could take as many as two courses with an arts focus and as few as one with a humanities focus, or she could do the reverse. The average proportion of arts courses vis-à-vis humanities courses taken would not change under the new system.

As with the distinction between I and T, we find that the distinction between A and IH-taken-in-the-arts has grown unclear. More generally, **the educational objectives of our subject areas are unclear**, and this makes productive discussion of subject areas very difficult. Without knowing what BA and BH mean, any discussion about the number of courses required in one versus the other can only descend into a discussion about how divisions should divvy up students. This problem extends to the rest of the subject areas too.

It should be emphasized that today's 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

³ The policy is actually that at most one IH course can come from the Arts *Division*. This nuance points up the way discussion can confuse administrative/resource concerns with educational objectives.

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.

CEP does not feel it can propose detailed educational objectives for our subject areas without more participation of the faculty. **In the coming months we will work with department chairs and undergraduate directors, and through them with their departmental faculty, to develop these objectives. These will be included in next fall's final proposal.**

To give an idea of what we have in mind, here is a possible statement of objectives for a Social Sciences Breadth course.

Social science courses that satisfy the general education requirement should provide two elements:

- 1) an introduction to a substantive area of social science knowledge (e.g., cognitive psychology, linguistic anthropology); and
- 2) an introduction to at least one of the methods of research commonly used in the social sciences (e.g., experimental inquiry, ethnographic study, longitudinal inquiry).

The first requirement may be approached broadly (providing an overview of a major area) or narrowly (going into to depth in a specific area such as visual neuroscience or the sociology of gender).

Putting aside differences between subject areas, CEP envisions several categories of Breadth courses, defined by their broad educational objectives, as shown below. These are not designations students are required to take; they would all be "B" courses and departments would be free to choose what kind of Breadth courses they offer. The point is rather to guide departments in thinking about what sort of course they offer and why, and to guide those who approve the GE Breadth designation in making decisions. Two of the categories are basically today's I and T.

Kinds of Breadth courses:

Overview

Overview courses acquaint the student with a field of study or with a methodological approach to inquiry. Overview courses should be reasonably broad in their approach, rather than narrowly focused. They should contribute to the breadth of a student's education not only by imparting knowledge but by deepening a student's understanding of a way of thinking. They should also try to convey a sense of the discipline or approach's importance. Finally, though necessarily condensing and summarizing a field or methodological approach, Overview courses should be *complete*, in the sense of being appropriate for *non-majors* who will take no more courses in the subject area. They should have no prerequisites.

Introductory

Introductory courses inform students of a discipline's scope or methodology, prepare students effectively for advanced classes, or both. Students are advised about a discipline's suitability as a major or are prepared for advanced course work in the field. They are required of majors. They should have no prerequisites.

Topical

Topical courses are centered on topic of broad intellectual or social relevance rather than on a discipline. They approach their topic from an *interdisciplinary* perspective. They can provide a place for discussion of values and assumptions at an introductory level not usually found in introductory courses. They are not designed to introduce the discipline to non-majors. They should have no prerequisites.

5. Ways of Learning and the Matrix

General education is about more than subject breadth. A GE program should also impart essential university-level skills and habits of thought. We have in mind here objectives such as the development and application of quantitative or formal skills, and the ability to analyze cultural differences, for example--objectives currently covered by our Quantitative (Q) and Ethnic Minorities/Non-western Society (E) requirements. In principle writing belongs here too, but we treat it separately below. The objectives one might pursue apart from breadth make up a diverse group, but it is convenient to have a name for them, and here we call them Ways of Learning.

There is no reason why a course might not satisfy both a Breadth and a Ways of Learning requirement. The potential for this kind of overlap is already written into our current requirements: as Figure 1 (p. 10) indicates, the Q, E, and W designations may overlap with breadth designations. For example, a course might have both a Quantitative and an Introduction to Social Sciences designation. Not only is this kind of overlap harmless; it is a very good thing. Quantitative and cross-cultural analytical skills are best acquired not within a vacuum but within some empirical domain. The same can be said of other "ways of learning".

But our current system only *allows* Breadth courses to satisfy Ways of Learning requirements; it does not *require* them to do so. In our view this is a missed opportunity, depriving general education of some of the purpose it might have. The question we are raising is whether breadth courses should really be only about disciplinary or even methodological breadth. We don't think so. For example, we think most faculty would agree that Breadth courses should develop students' ability to think critically, analytically, and independently; they should not simply focus on acquisition of knowledge. It should either be implicit, or stated explicitly in their educational objectives, that general education courses do this. (See also point (2) of the draft

objectives for a Social Sciences course in the last section.) In the same spirit, though, we can explicitly ask them to do even more.⁴

To give more depth, rigor, and purpose to general education, we propose that every course satisfying a Breadth requirement simultaneously satisfy one of the Ways of Learning requirements, according to a scheme we might call the Matrix, shown in Figure 3. (“# Requirements” refers to the number of Breadth courses required in each subject area, already familiar from the last section.)

<i>The Matrix</i>		<i>Ways of Learning</i>					# Required
		Quantitative	Cross-cultural	
<i>Breadth</i>	Arts						1
	Humanities						2
	Natural Sciences/Engineering						2
	Social Sciences						2

Figure 3: the “Matrix”. Every Breadth course must simultaneously satisfy a Ways of Learning requirement.

Each cell in this scheme would correspond to a possible general education course (though some combinations may be more likely than others). According to the proposal, every Breadth course *would have to* occupy some cell in this sense. Students would be required to satisfy the full range of Ways of Learning requirements, just as with Breadth requirements. But this would not mean imposition of more *course* requirements. In our view, this would make general education both more rigorous and more efficient.

What should the “ways of learning” be?

Given the feedback we’ve received from faculty so far, we find broad support for two or three categories:

- Quantitative and/or formal reasoning (similar to current Q).
- Cross-cultural understanding (similar to current E).
- Race, ethnicity, and gender (similar to current E).

We suggest the following for further discussion. The number of Ways of Learning categories should probably not exceed about five.

⁴ The following proposal is inspired by recent changes to general education at Duke University.

- Critical thinking.
- Creative endeavor.
- Statistical reasoning/ data interpretation.
- Science, technology, and society.
- Environmental understanding.

We briefly discuss the first three of these in turn, and give draft educational objectives.

We emphasize that the proposed educational objectives are intended to provoke discussion and revision. Our plan is to develop them further in consultation with faculty, as with the Breadth objectives.

Quantitative/formal reasoning

There is a broad consensus on campus that students should be exposed to “quantitative reasoning” in some form, but there is less consensus on what this should mean. We propose basically to retain something like the current Q designation, but explicitly broadening it to allow for courses in formal logic, programming, and so on, areas of study that involve what might be called “formal reasoning”.

Quantitative/formal reasoning

These courses incorporate university-level mathematics (at the level of advanced algebra or higher) into course material. Alternatively, they may incorporate computer programming, formal logic, or other material that similarly stresses model building or rigorous application of formal systems.

Courses in mathematics should

- a) explain the differences between facts and opinions, and mathematical proof and informal argumentation
- b) present the rules of logic and the derivation of additional facts from a set of established facts and assumptions
- c) provide experience working with a formal system (e.g. doing proofs)

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Cross-cultural understanding

The current Ethnic Minorities/Non-western Society (E) designation arguably addresses two very different objectives. One has to do with understanding differences along social dimensions such as race, ethnicity, gender, and sexuality, and exploring the social dynamics of such differences. (The E requirement focuses particularly on ethnicity, but

we suggest that this should be broadened.) The other involves the exploration of non-U.S. cultures.

We propose to split the E requirement into separate Cross-cultural Understanding and Race, Ethnicity, and Gender requirements. Given its aims, a Cross-Cultural Understanding course need not be limited to non-Western cultures.

Cross-cultural understanding

These courses aim to encourage a broader and deeper understanding of cultures and societies outside the United States. They also strive to develop the analytical skills needed to explore the complex issues raised by international relations and the processes of globalization as well as the openness and sensitivity necessary for cross-cultural understanding.

Race, ethnicity, and gender

In our view a Race, Ethnicity, and Gender course, on the other hand, need not be limited to the study of groups within the U.S.

Race, ethnicity, and gender

These courses explore differences along social dimensions such as race, ethnicity, gender, and sexuality. They also strive to develop the analytical skills needed to explore the complex issues raised by the social dynamics of such differences.

6. 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.⁵ 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.

⁵ This is not entirely true. Not all colleges at UC San Diego require a foreign language, for example.

CEP has asked the Acting Director of Admissions to investigate what proportion of incoming UCSC frosh would likely meet such a foreign language requirement. The goal is to explore to what extent a requirement would actually impose a resource burden on our campus. We will report our findings to the campus this fall.

7. Interdisciplinary topical clusters

Breadth and vision

As we have seen, a major goal of our GE program is to impart breadth by means of distributional requirements. Breadth is necessary, and the freedom offered by a distributional system is good, but there are some who believe that distributional systems leave something to be desired. Because no course chosen relates to any other course chosen, a student's GE curriculum is in imminent danger of lacking overall vision, of being incoherent. This outcome is in fact almost guaranteed by the huge number and range of courses available within every subject area. The existence of all these choices in part reflects our decision as faculty to make it be so. But, as we have already noted, it also reflects the difficulty university faculty have agreeing on specific things that a student should learn. Breadth in this form does have its drawbacks.

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. Two we have already seen. The first involves better articulating the educational objectives of GE and putting in place better mechanisms of oversight of the curriculum. The second involves exploring the idea that GE designations should not be defined in terms of subject area alone but should (or at least could) imply attention to learning objectives that transcend any particular subject, what we call Ways of Learning.

Here we propose a third idea to bring more coherence to general education.

Topical courses

One of our breadth 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. 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 Breadth courses to create “interdisciplinary topical clusters” of two or more courses. Clusters would likely be at least partially sequenced--courses would have to be taken in a specified order. And 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; 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 Breadth requirements. Each course in a cluster should normally belong to a different subject area--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.⁶ 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

⁶ We recommend Tinto (1993) for a set of “Principles of Effective Retention”.

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.”

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:⁷

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 Breadth courses, from various departments and divisions, for example on the theme of *sustainability*. Suppose this cluster were linked to College 8. (CEP is currently discussing this possibility with College 8 and certain departments.) College 8 students would be required to take this cluster, at least by default.⁸ 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

⁷ See references.

⁸ It remains to be seen whether a college can realistically be linked to only one 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.

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 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 Breadth 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 + Breadth into their schedule in a given quarter. A possible solution would be to make the Breadth course a 3- rather than a 5-unit course, with some students taking 18 units in the relevant quarter instead of 15.

8. 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.⁹ 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.

Requirement	When taken	How taken ¹⁰
C1 (Composition)	1 st year	Usually college core course
C2 (Composition)	Before 7 th 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 the 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 10.) 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

⁹ See “Resolution on Writing Intensive” at our general education web site, at <http://Senate.ucsc.edu/cep/GenEdReformIndex.html>.

¹⁰ The reason for the “usually” 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.

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;
- 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 9) 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.
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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.

In order to explore the feasibility of this DC requirement, CEP has been working with individual departments. We will give an update on our progress at the May 30 meeting.

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

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.

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Respectfully submitted;

COMMITTEE ON EDUCATIONAL POLICY

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Loisa Nygaard
Kip Tellez
Jack Vevea
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May 16, 2008