

Report of the Task Force on General Education



HARVARD UNIVERSITY | *Faculty of Arts and Sciences*

Report of the Task Force on General Education

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PREFACE

THIS REPORT DESCRIBES A NEW PROGRAM of general education at Harvard College—the set of requirements, outside the concentration, that all students must meet before they can receive a Harvard degree. We believe that the program complements ongoing initiatives in undergraduate education: changes in the concentrations and the creation of secondary fields; the mounting of new courses in the sciences and humanities; efforts to renew and reward faculty commitments to teaching and pedagogical innovation; and the many opportunities Harvard offers for extracurricular experiences that can be linked to learning in the formal curriculum. The ambition of the program of general education we describe in this report is to enable undergraduates to put *all* the learning they are doing at Harvard, outside as well as inside the classroom, in the context of the people they will be and the lives they will lead after college.

In the pages that follow, we propose:

- a new rationale for general education at Harvard;
- eight subject areas for courses in general education;
- new guidelines for determining which courses may be used for general education, allowing students more choice in finding ways to satisfy their requirements;
- wider adoption of innovative pedagogical techniques in general education courses and throughout the curriculum;
- an activity-based learning initiative to explore procedures for linking extracurricular activities to the classroom experience.

General education is one distinct component of a liberal education, and it is effective only when the other components of the undergraduate experience are working in concert with it. In conjunction with our proposals for general education, we therefore enthusiastically support ongoing efforts by our Faculty to promote:

- a fresh examination of the structure and requirements of the concentrations;
- a broader commitment by concentrations to instruction in written and oral communication;
- the development of more departmental electives that meet the needs and interests of non-concentrators;

- the further development of interdisciplinary and divisional courses and the creation of nimble administrative structures to support them;
- opportunities for increased contact between undergraduates and ladder faculty.

Our Task Force has had the advantage of looking back over the history of the Harvard College Curricular Review; we have also observed the many fresh initiatives in teaching and learning that are currently underway in Harvard College. The Faculty is making great progress in revitalizing the undergraduate experience. We have undertaken our work in a spirit of partnership with these enterprises, and we hope that our proposals will make some contribution toward bringing all of this good work into focus.¹

¹Many of the elements of our proposal echo specific recommendations made by colleagues and published in the booklet “Essays on General Education in Harvard College” (2004), available online at http://www.fas.harvard.edu/curriculum-review/gened_essays.html. In particular, our goals for general education and the way we have sought to realize them in a curriculum follow closely ideas expressed in the essays by Peter Bol, Peter Galison, Jennifer Hochschild, Charles Maier, and George Whitesides. We also took note of the forceful (and, we hope, premature) critique of the review of general education requirements by Harry R. Lewis, in *Excellence Without a Soul: How a Great University Forgot Education* (New York: PublicAffairs, 2006). We have benefited from President Derek Bok’s most recent book, *Our Underachieving Colleges: A Candid Look at How Much Students Learn and Why They Should Be Learning More* (Princeton: Princeton University Press, 2005).

I.
THE REASON FOR GENERAL EDUCATION

A HARVARD EDUCATION IS A LIBERAL EDUCATION—that is, an education conducted in a spirit of free inquiry undertaken without concern for topical relevance or vocational utility. This kind of learning is not only one of the enrichments of existence; it is one of the achievements of civilization. It heightens students’ awareness of the human and natural worlds they inhabit. It makes them more reflective about their beliefs and choices, more self-conscious and critical of their presuppositions and motivations, more creative in their problem-solving, more perceptive of the world around them, and more able to inform themselves about the issues that arise in their lives, personally, professionally, and socially. College is an opportunity to learn and reflect in an environment free from most of the constraints on time and energy that operate in the rest of life.

A liberal education is also a preparation for the rest of life. The subjects that undergraduates study and, as importantly, the skills and habits of mind they acquire in the process, shape the lives they will lead after they leave the academy. Some of our students will go on to become academics; many will become physicians, lawyers, and businesspeople.¹ All of them will be citizens, whether of the United States or another country, and as such will be helping to make decisions that may affect the lives of others. All of them will engage with forces of change—cultural, religious, political, demographic, technological, planetary. All of them will have to assess empirical claims, interpret cultural expressions, and confront ethical dilemmas in their personal and professional lives. A liberal education gives students the tools to face these challenges in an informed and thoughtful way.

A liberal education is useful. This does not mean that its purpose is to train students for their professions or to give them a guide to life after college. Nor does it mean instilling confidence in students by flattering the presumption that the world they are familiar with is the only one that matters. On the contrary, the aim of a liberal education is to unsettle

¹ Roughly five percent of seniors say that they intend to pursue doctoral study in the arts and sciences in the fall after graduation, and eighteen percent say that they plan to pursue a Ph.D. some time in the future. Fifty-three percent of graduating seniors in 2006 said that they were expecting to enter a professional school—business, medicine, or law.

presumptions, to defamiliarize the familiar, to reveal what is going on beneath and behind appearances, to disorient young people and to help them to find ways to re-orient themselves. A liberal education aims to accomplish these things by questioning assumptions, by inducing self-reflection, by teaching students to think critically and analytically, by exposing them to the sense of alienation produced by encounters with radically different historical moments and cultural formations and with phenomena that exceed their, and even our own, capacity fully to understand. Liberal education is vital because professional schools do not teach these things, employers do not teach them, and even most academic graduate programs do not teach them. Those institutions *deliberalize* students: they train them to think as professionals. A preparation in the liberal arts and sciences is crucial to the ability to think and act critically and reflectively *outside* the channels of a career or profession. The historical, theoretical, and relational perspectives that a liberal education provides can be a source of enlightenment and empowerment that will serve students well for the rest of their lives. It is with this aspect of liberal learning in mind—the influence it can have on the kinds of lives students will lead after they leave Harvard—that we propose the program in general education that follows.

The world has changed since the last time the Faculty instituted a general education curriculum. So has the state of knowledge, and so has Harvard. We think that a general education curriculum needs to take these changes into account. We do not think, however, that this means that we should teach courses that simply train students to deal with today's issues. Professors routinely make connections in class between what they are teaching and what is going on around us. We wish to stress how important this kind of connection can be for students. We do not propose that we teach the headlines, only that the headlines, along with much else in our students' lives, are among the things that a liberal education can help students make better sense of. All of us believe that what we teach is important for students to know. General education is a place where we can explain *why* it is important.

A Harvard education has many dimensions: student organizations, the performing arts, athletics, and the life of the residential houses all contribute to the intellectual, ethical, and personal growth of undergraduates. The academic experience, though, is the centerpiece. It has three components: the concentration, electives, and general education. The concentration enables students to pursue a disciplinary interest in depth; electives enable them to explore fields outside their main academic focus and to broaden their interests and enthusiasms. The role of general education, as we conceive it, is to connect in an explicit way what students learn at Harvard to life beyond Harvard, and to help them understand and appreciate the complexities of the world and their role in it. We face the challenge of preparing our students to lead flourishing and productive lives in a world that is dramatically different from the world in which most of us grew up. The world today is interconnected to a degree

almost inconceivable thirty or forty years ago. It is, at the same time, and in ways that are often obscured in the press and the culture of public life, a deeply divided, unstable, and uncertain world. Harvard's students will need to make their way in an environment complex for new and incompletely understood reasons; they will also lead lives that affect the lives of others. It is our mission to help them to find their way and to meet their responsibilities by providing a general education curriculum that is responsive to the conditions of the twenty-first century. The material that is taught in general education courses is continuous with the material taught in the rest of the curriculum. It is part of a liberal education. But it is taught in a distinctive way and in the service of distinctive goals. General education is the place where students are brought to understand how *everything* that we teach in the arts and sciences relates to their lives and to the world that they will confront. General education is the public face of liberal education.

II.

THE GOALS OF THE GENERAL EDUCATION CURRICULUM

THE GENERAL EDUCATION CURRICULUM we have designed aims at four overarching goals in linking the college experience to the world its graduates will confront. These goals are, in many respects, overlapping, and they are not tied to specific disciplines or departments.

General education prepares students for civic engagement. Civic engagement means participation in public life. Harvard should seek, throughout the college experience and in its general education curriculum in particular, to inspire its students to become active and engaged citizens locally, nationally, and internationally. Achieving this goal requires that students understand the forces driving local, national, and global change: the diverse cultures that have helped to shape communities and identities; political, economic, and social institutions; and advances in science and technology. Students need to appreciate that citizenship today brings responsibilities that are both local and cosmopolitan, national and international. Most of our students are citizens of the United States, but whether they are American citizens or students who have come here for college and will return home, we ought to help them to have a critical and balanced understanding of American history, institutions, and values, and a critical appreciation of the place of those institutions and values in a shifting global context.

General education teaches students to understand themselves as products of—and participants in—traditions of art, ideas, and values. Students should understand what is at stake in cultural conflicts. They need to appreciate the considerable difficulties in negotiating across cultural differences; they also need to see how cultures that seem opposed have often emerged from shared traditions, and can, despite their differences, have profound effects on each other. Students also should know how to “read” cultural and aesthetic expressions. Knowledge of the history of art, religion, and ideas, both those of their own culture and of other cultures, helps students appreciate the contingent nature of the world of beliefs and practices they inhabit; it helps them see how their identities have been shaped; and it helps them understand their own traditions in relation to other traditions. Familiarity with the dynamics of culture, both past and present, is essential to students’ successful navigation of today’s world.

General education prepares students to respond critically and constructively to change.

Students need to know about the forces that generate change and transformation in modern life, not only in order to make informed decisions as civic agents, but in order to have some degree of control over their own lives. Perhaps no area of endeavor today exerts more powerful transformative effects than science and technology. General education is one of the means by which all students can become familiar with important concepts and issues in these areas, and wrestle with their social, personal, and ethical implications. Rapid change is also a feature of contemporary political, economic, and cultural life. Our world is not a stable one, and students are ill-served by a curriculum that assumes that the shape of things today is all they need to understand in order to engage with the political, socio-economic, and technological landscape of tomorrow. Students need to leave Harvard with skills to match the world's speed.

General education develops students' understanding of the ethical dimensions of what they say and do. Liberal education is about more than the acquisition of information, skills, and techniques. It is also about the capacity to grasp the ethical consequences of the ways in which those acquirements are put to use. Ethical awareness is achieved in part by helping students reflect critically on their own beliefs and values, and learn how to defend them with reasoned arguments. It is also achieved by exposing students to beliefs and values that have shaped others' lives, historically and internationally, so that they are put in a position from which they can choose for themselves what principles will guide them. Students may well reaffirm the principles they came to Harvard with, but they should be able to do so self-consciously and deliberately. In addition, they should gain a deeper understanding of other belief systems, even when they do not share them. They should see that conflicts about values arise from a variety of sources, including cultural differences, religious differences, socio-economic differences, and the impact of developments in science and technology.

III.

THE GENERAL EDUCATION CURRICULUM

A. REQUIREMENTS

Given the rationale and goals of general education outlined above, we propose that the Faculty adopt a system of general education in which students are required to take one half-course in each of the following eight categories:

- Aesthetic and Interpretive Understanding
- Culture and Belief
- Empirical Reasoning
- Ethical Reasoning
- Science of Living Systems
- Science of the Physical Universe
- Societies of the World
- The United States in the World

In addition, we strongly recommend that the Faculty launch an initiative in activity-based learning, with a view to considering the future creation of an additional component of the general education program.¹

General education courses are distinguished by their emphasis on breadth, on context, on connectedness, and on the relation between the material students are studying and things they will be doing for the rest of their lives: interpreting cultural artifacts, participating in political processes, coping with the ramifications of technological developments, interacting with people from diverse backgrounds, assessing the various scientific claims that are made in public discourse, and facing ethical dilemmas in their personal and professional lives. Making connections between the material covered in the classroom and “real-life” topics and problems of interest to undergraduates serves two purposes. It demonstrates

¹In addition to the General Education requirements, Harvard College currently requires that students reach a certain level of facility in a language other than English and that they take a course in expository writing. We do not address these current requirements. We endorse efforts of the Standing Committee on Writing and Speaking to enhance instruction in that area, and we encourage the Faculty to reexamine the language requirement.

to students that everything in a liberal education bears, in one way or another, on the lives they will lead after college. And, as importantly, making these connections is a way of instilling in students a lifelong interest in the subjects they are studying.

General education courses should therefore:

- serve one or more of the goals of general education, as described above, in section II;
- present a wide range of material, rather than focus in depth on a single topic or a small number of texts;
- help students learn how to use abstract conceptual knowledge or a knowledge of the past to understand and address concrete issues and problems; and
- make students aware that all of their coursework makes a difference to the people they will become and the lives they will lead after college.

The general education curriculum we propose does not pretend to constitute a comprehensive guide to everything that an educated person should know. There is simply too much information to cover. Because the categories target relatively broad subject areas, there is room for a variety of topics to be taught and for all departments and disciplines to be represented. What will distinguish general education courses from most concentration courses and electives is that the subjects will be taught with an eye toward the specific goals of general education, and in accordance with the criteria listed above and outlined below for the different subject areas. We have therefore made an effort not to map these eight subject areas onto departments. We expect that some general education courses will involve collaborative teaching by faculty from different departments or even different divisions and Schools; other courses may be taught from a single disciplinary perspective.

We envisage a general education program in which students will be able to choose from among a variety of approved courses to satisfy their requirements. Some courses that satisfy the requirements will be located outside departments and listed at the front of the course catalogue; others will be departmental courses. There will be no exemptions from portions of the general education curriculum, but there will be ways for students to double-count courses for both general education and concentration credit. In particular, students will be able to use courses in concentrations to fulfill their general education requirements if those courses meet one or more of the goals of general education described above, as well as the relevant subject area criteria described below; conversely, we expect departments to allow appropriate general education courses to be used for concentration credit.² Some courses might be appropriate for

²General education courses listed in the front of the course catalogue should offer broad and generally accessible coverage of their subjects; departmental courses might sometimes be more specialized and draw on breadth acquired in other courses, and therefore be more appropriate for students who already have a preparation in the subject.

credit in more than one general education area, and students should be given a choice of how they wish to count such courses. It is important to avoid confronting students with an overly-restricted menu. It is also important to avoid imposing a one-format-fits-all requirement on general education courses.

B. PEDAGOGY

Pedagogy is an integral aspect of the general education program we envision.³ Large lectures can be an effective means of instruction, but general education courses should strive to create a learning environment in which the relationship between teachers and students, and between students and students, is interactive.⁴ Increasing student engagement in the classroom is a desideratum noted by many of our Curricular Review committees, and it is something to which general education courses in particular ought to aspire. As part of the mission to improve teaching generally at the College, we propose as pedagogical desiderata that all general education courses be taught, to the extent practicable, in interactive formats that give students an opportunity to discuss the material with the faculty member teaching the class and with each other. In the case of a large class, this may mean simply setting aside a period of the lecture hour for questions and comments. And, because students retain what they learn better when they work through concrete exercises, general education courses should strive to apply the basic concepts and principles they teach to the solution of concrete problems, the accomplishment of specific tasks, and the creation of actual objects and out-of-classroom experiences.⁵

³The Standing Committee on Pedagogical Improvement and the Committee on a January Term both make a point of calling for increased engagement in the classroom. See their reports in *Curricular Renewal in Harvard College* (January 2006), hereafter *CRHC*. The reports are available online at http://www.fas.harvard.edu/curriculum-review/cr_committees.html.

⁴On the importance of faculty-student interaction, see Ernest T. Pascarella and Patrick T. Terenzini, *How College Affects Students, Volume 2: A Third Decade of Research* (San Francisco: Jossey-Bass, 2005), 122-124, 189-190. Substantive, intellectual interactions have a stronger influence than social interactions do. See also Richard J. Light, *Making the Most of College: Students Speak Their Minds* (Cambridge, Mass.: Harvard University Press, 2001), 93-98, 108-110. On the effects of class size on learning, see Pascarella and Terenzini, 94-95.

⁵On the success of case-based or problem-based pedagogy, see Bok, 125-27. We note that the Committee on Science and Technology Education similarly recommends that introductory courses in the sciences, both general education courses and departmental courses, be problem-oriented and that they stress the “context of the science...prior to the fundamentals” (“Report of the Committee on Science and Technology Education,” *CRHC*, 120). See also *Enhancing Science and Engineering at Harvard: The Preliminary Report from the University Planning Committee for Science and Engineering* (July 2006), 20-22. (Available online at http://www.provost.harvard.edu/reports/UPCSE_Interim_Report.pdf.)

C. SUBJECT AREA DESCRIPTIONS

All general education courses should meet the criteria outlined above. The descriptions that follow present additional criteria for determining whether a course is appropriate for general education within a specific subject area. The entire set of criteria in each subject area applies to courses in that area. These criteria, and the subject areas themselves, were developed in extensive discussions with faculty colleagues. Since the distribution of the October 13 Preliminary Report, members of the Task Force have met (in some cases more than once) with the Faculty Council, the Caucus of Chairs, the Educational Policy Committee, the Committee on Undergraduate Education, the Task Force on Teaching and Career Development, the Harvard chaplains, the Life Sciences Council, the Social Science Advisory Council, and the Departments of Anthropology, Chemistry and Chemical Biology, Economics, English and American Literature and Language, History, History of American Civilization, History of Science, Music, Psychology, Philosophy, Physics, Romance Languages and Literatures, and Sociology. We have met with members of previous general education committees and of the Standing Committee on the Core, with administrators who are involved with student extracurricular activities, and with the Harvard College Board of Overseers. We have had many communications from individual colleagues and groups of colleagues; we have held several conversations with students under the auspices of the Undergraduate Council; and we have engaged in numerous one-on-one discussions with colleagues. We also convened several separate groups of colleagues to discuss specifically the proposed subject areas. We are grateful to the many members of the Harvard community who were generous with their time and ideas.

1. Aesthetic and Interpretive Understanding

One of the goals of general education is to help students understand themselves and others as products of and participants in traditions of culture and belief. One step toward achieving this understanding is the development of aesthetic responsiveness and the ability to interpret forms of cultural expression—literary or religious texts, paintings, sculpture, architecture, music, film, dance, decorative arts. These skills allow students to engage intelligently and critically with the world of art and ideas, and they are necessary for understanding how meanings are produced and received. Reading a poem, looking at a painting, and listening to a piece of music are complex capacities that build an informed sensitivity, an interaction between the intellect and the senses. And students need to know how to interpret cultural works—to know, for example, how to distinguish the literal and symbolic, something that is crucial to evaluating and making sense of everything from religious texts and lyric poems to pop songs and motion pictures. Knowing something about language and perception can heighten students' aesthetic responses to and interpretation of cultural objects. Exploring theoretical and philosophical issues concerning the production and

reception of meanings and the formation of aesthetic judgment enhances students' awareness of ways in which cultural objects acquire value and significance.

Courses in Aesthetic and Interpretive Understanding should:

- develop students' skills in criticism, that is, their aesthetic responsiveness and interpretive ability;
- introduce students to primary texts and/or works of art in one or more media;
- teach students how to analyze these works in the context of a theoretical framework, such as critical theory, aesthetics, philosophy of art, rhetoric, theories of language and meaning, or theories of perception; and
- include, where practicable and appropriate, out-of-the-classroom experiences, such as visits to exhibitions, performances, and readings, or interactions with performers, directors, and curators, or allowing students to undertake creative work.

2. Culture and Belief

In developing an awareness of themselves and other people as products of and participants in traditions of culture and belief, students need to do more than acquire skills in interpreting and responding to art and ideas—the aim of courses in the Aesthetic and Interpretive Understanding subject area, above. They need to put these works in context—to see how social, political, religious, and economic, and cross-cultural conditions shape the production and reception of ideas and works of art. They also need to learn about the ways in which cultures and beliefs mediate people's understanding of themselves and the world.

The role of culture and belief in shaping identities and communities is not simple: culture and belief can cause change, and they can also be sources of resistance to change. Cultural expressions have never been more widely disseminated. Music, images, and literature of all kinds are accessible to an extent unheard of even twenty years ago, and this has altered the way we think about cultures. We are more aware than ever of the degree to which cultures feed off one another across national, regional, religious, and ethnic boundaries. Yet it is often in the name of their culture that national and ethnic groups engage in conflict with other groups.

Religious beliefs and practices are topics that some courses in this category should address. Religion has historically been, and continues to be, a force shaping identity and behavior throughout the world. Harvard is a secular institution, but religion is an important part of our students' lives.⁶ When they get to college, students often struggle to sort out

⁶Ninety-four percent of Harvard's incoming students report that they discuss religion "frequently" or "occasionally," and seventy-one percent say that they attend religious services.

the relationship between their own beliefs and practices and those of fellow students, and the relationship of religious belief to the resolutely secular world of the academy. It is also important for students to have the opportunity to learn something about the impact that religious belief and practice has on the world, as well as on themselves.

There are many topics of wide practical and intellectual interest that courses in Culture and Belief might address: problems of translation, the concept of authorship (its significance for claims about plagiarism or copyright), censorship, conflicting interpretations of religious and other texts, institutional mediation of aesthetic experience (art museums, the music industry, the church), canon formation, the tensions between modernity and reactionary thinking, violence and its representation.

Courses in Culture and Belief should:

- introduce students to primary texts and/or works of art in one or more media;
- teach students how to analyze these works in the light of their historical, social, economic, and/or cross-cultural conditions of production and reception;
- examine ways in which traditions of culture and belief shape the identities of individuals and communities; and
- draw connections between the material covered in the course and cultural issues of concern or interest that are likely to arise in students' own lives.

3. Empirical Reasoning

After they graduate, students will be making important decisions, for themselves and others, under conditions of uncertainty. They will have to decide, for example, what medical treatments to undergo, when a defendant in court has been proven guilty, whether to support a policy proposal, and how to manage their personal finances. They also will be called upon, as individuals and as citizens, to evaluate empirical claims made by others. Courses in empirical reasoning help students learn how to make decisions and draw inferences in matters like these that involve the evaluation of empirical data. They teach students how to gather and assess information, weigh evidence, understand estimates of probabilities, solve problems, draw inferences from the data available, and also how to recognize when an issue cannot be settled on the basis of the available evidence. To develop these abilities, students need to learn how to apply the abstract principles and concepts of probability theory, statistics, decision theory, logic, and mathematics to concrete problems. Ordinarily, they will learn to do this in the form of hands-on exercises. Just as one doesn't become a marathon runner by reading about the Boston Marathon, so, too, one doesn't become a good problem solver by listening to lectures or reading about statistics. Students should learn empirical reasoning by practicing it.

Empirical reasoning is not a discrete body of knowledge. It is a set of related conceptual skills that guide valid reasoning and decision-making. To take just a few examples, students might learn the statistical principle that exceptional cases will regress to the mean; that

relaxing the standards for reporting an uncertain event will increase both hits and false alarms; that a person with the typical symptoms of a rare condition probably does not have that condition; that in certain interactions the best option for each individual can bring about the worst outcome for all of them. It is also helpful for students to become aware of the many mistakes that human beings are prone to making in their reasoning, such as mistaking correlation for causation, ignoring base rates in estimating probabilities, over-interpreting coincidences, and the like. Knowing common pitfalls in inference-making can help students avoid them.

Empirical reasoning should be taught in the context of a variety of subjects so that students can work on topics of intrinsic interest to them, such as medicine and disease, public policy and political behavior, and legal or economic decision-making. We expect that many students will fulfill the requirement with courses in the statistical and analytical methods of their field. Mathematics and logic courses that demonstrate the applicability of their methods to concrete problems should also count toward this requirement.

Courses in Empirical Reasoning should:

- teach the conceptual and theoretical tools used in reasoning and problem solving, such as statistics, probability theory, mathematics, logic, and decision theory;
- provide hands-on exercises in which students apply these tools to concrete problems in an area of general interest to undergraduates; and
- where practicable, familiarize students with some of the mistakes human beings typically make in reasoning and problem-solving.

4. Ethical Reasoning

Many of the decisions our students will make in their personal and professional lives will have ethical implications: choosing a political candidate to support; assessing public policies; negotiating professional interactions; resolving family dilemmas; and, ultimately, choosing among different life projects. Courses in Ethical Reasoning teach students to reason in a principled way about moral and political beliefs and practices, and to deliberate and assess claims for themselves about ethical issues. These courses will examine competing conceptions and theories of liberty, justice, equality, democracy, rights, obligations, the good life, and the like, illustrating how they bear on the sorts of concrete ethical dilemmas students may encounter in their public, professional, and personal lives. Because they explicitly link theory and practice, some courses in this category might profitably engage professional school faculty.

In learning how to wrestle with ethical issues, it is often helpful for students to encounter a value system very different from their own, one that calls attention to the many ethical assumptions that they make without realizing it. This encounter may be with a value system

from the past or from a different culture, and it may be within the context of a religious tradition.

By challenging students to evaluate, and possibly change, the assumptions and values they grew up with, these courses promote our students' personal development and build the capacities for argument and deliberation essential for effective civic agency. Advances in science and technology will continue to raise difficult and unanticipated ethical questions into the future, and the impact of social and economic globalization is felt perhaps most keenly when ethical convictions of different cultures collide. Students must be equipped to engage with the challenges that these twenty-first-century realities will raise.

Courses in Ethical Reasoning should:

- examine competing conceptions and theories of ethical concepts such as the good life, obligation, rights, justice, liberty;
- teach students how to assess and weigh the reasons for and against adopting these various conceptions and theories;
- apply these conceptions and theories to concrete ethical dilemmas of the sort they will encounter in their lives, such as those that arise in medicine, law, business, politics, and daily life; and
- where practicable, acquaint students with value systems different from their own, such as those of different world religions or different historical periods.

5. Science of Living Systems

The exponential growth of scientific knowledge has been accompanied by a corresponding increase in the impact of science and engineering on all members of society, scientists and non-scientists alike. Within the spectrum of science and engineering activities, understanding life—its origins, the way it changes and is changed by the environment, and the ways in which its span in humans can be extended—continues to be an area of enormous activity. The science and engineering that study living organisms have affected our students in many ways: such studies have led to life-saving medicines, technologies for diagnosing and understanding human disease, genetically engineered plants and animals as new food sources, and the invention of biological warfare agents. The life sciences have also stood at the crossroads of many of the most vigorously debated and transforming public issues of the past centuries, including the theory of evolution by natural selection, the legality of embryonic stem-cell research, and the ethics of human cloning.

General education courses in Science of Living Systems teach central facts and concepts in the life sciences and engineering and relate them to life outside of the classroom or laboratory. These courses do not strive to train students to become future scientists or to enable students to take more advanced science classes; therefore, they are not expected to cover in depth any specific scientific sub-discipline. Rather, general education courses

in Science of Living Systems should convey material that is broadly applicable to life after college. To do so, they should:

- introduce students to key concepts, facts, and theories relevant to living systems;
- teach the nature of experiments on living systems, ideally through hands-on laboratory experiences;
- relate scientific concepts, facts, theories, and methods to real-world problems of wide concern; and
- where practicable and appropriate, discuss one of the following: the social role that the knowledge, practitioners, and/or institutions of science play; the role of social context in the development of scientific knowledge; the history of the knowledge and/or methods that are being taught; the analysis, evaluation, and status of truth claims about the natural world.

Although much of the connection to real-world problems may be pedagogical, the courses should attempt to provide students with conceptual tools that they can use critically to evaluate scientific claims that they will encounter.

Understanding the science of living systems prepares students to adapt to changes in their lives that will be driven by advances in the science and engineering of living systems. Knowledge of what scientific experimentation can (and cannot) establish further prepares students to participate in society by enabling them to evaluate scientific claims, to consider alternative accounts for empirical findings, and to appreciate the ambiguity that often surrounds such findings. Moreover, scientific knowledge of the living world can provide material essential to understanding the ethical dimension of many issues and decisions that our students will face in the years after college.

6. Science of the Physical Universe

Advances in our scientific understanding of the physical universe that lies outside of living systems have had a profound impact on society. These discoveries and inventions have enabled the storage and harvesting of energy, the development of nuclear power, insights into the origins of our planet and galaxy, and the invention of computers and the Internet. Concepts in the physical sciences also underlie a number of issues that affect societies across the globe, including reliance on fossil fuels, the exploration of space, the proliferation of nuclear weapons, climate change, and privacy in an age of digital communication. By enabling energy and matter to be studied and manipulated in new ways, the science and engineering of the physical universe will continue to play an important role throughout our students' lives.

General education courses in Science of the Physical Universe teach central facts and concepts in the physical sciences and engineering, and relate them to issues that students

will encounter in their daily lives. These courses are not intended to produce budding scientists or engineers, but rather to provide a firm grounding in the nature of the physical world. General education courses in this category should therefore convey material that is broadly applicable to life after college. In order to do so, they should:

- teach key concepts, facts, and theories about the physical universe that equip the students to understand new discoveries and conceptual breakthroughs that will be made in the years after they graduate;
- teach the nature of experiments in the physical sciences and engineering, ideally through hands-on laboratory experiences;
- relate scientific concepts, facts, theories, and methods to real-world problems of wide concern to undergraduates; and
- where practicable and appropriate, discuss one of the following: the social role that the knowledge, practitioners, and/or institutions of science play; the role of social context in the development of scientific knowledge; the history of the knowledge and/or methods that are being taught; the analysis, evaluation, and status of truth claims about the natural world.

Although much of the connection to real-world problems may be pedagogical, the courses should attempt to provide students with conceptual tools that they can use critically to evaluate scientific claims that they will encounter.

An understanding of Science of the Physical World is crucial to achieving several goals of general education. Many features of the physical environment, both at home and in other countries, are subjects of extensive research in the physical sciences. These features are not constant: not only do natural forces continually reshape our world, but so do human-initiated forces. An understanding of key facts and theories about, and concepts pertaining to, the physical universe is essential if students are to be prepared to adapt to change, are to function as aware citizens, and are to be able to think critically about many ethical issues that are related to work in the physical sciences, such as the costs and benefits of alternative energy sources.

7. Societies of the World

Harvard undergraduates have grown up in a single-superpower world. The influence around the world of the United States culturally, economically, militarily, and scientifically is unprecedented. Yet, for that very reason, it is difficult for students inside the United States to understand this country from an international perspective, as a nation in continuous engagement with societies around the world, sometimes cooperatively and sometimes confrontationally. Students may be easily persuaded, by the manner in which other societies are represented in the press and in the culture of public life, that other people are, in some universal sense, “essentially” Americans. An important aim of the courses in the Societies

of the World category is to help students overcome this parochialism by acquainting them with values, customs, and institutions that differ from their own, and by helping them to understand how different beliefs, behaviors, and ways of organizing society come into being.

These courses may take a variety of disciplinary approaches to the examination of economic, political, and legal systems, and social relations. Courses may also address cultural practices or religious traditions, and their effect on social structures. Topics may be treated from a contemporary perspective or a historical one, as long as they help students develop an awareness of the diversity of ways in which human beings have organized their social existence. Some courses in this category might concentrate primarily on a single society, past or present, but they should demonstrate its connections, across time or geographical space, to one or more other societies (including, as appropriate, the United States). Other courses might address issues or themes that transcend national boundaries, analyzing the flow and transformation of money, goods, people, resources, information, or ideas between and among different societies.

There are many topics of wide practical and intellectual interest that courses in Societies of the World might explore, including immigration policy, ethnic identity and statehood, religion and government, global markets, constitutionalism.

Courses in Societies of the World should:

- examine one or more societies outside of the United States;
- demonstrate connections between societies and/or across historical periods in a single society; and
- relate the material studied to the kinds of social, political, legal, or economic issues students might encounter in an era of a globalization.

8. *The United States in the World*

Students need to learn something about societies other than the United States, but they should also leave Harvard with a sophisticated and nuanced understanding of American society. Courses in this category examine American social, political, legal, and economic practices and institutions, and they make connections between the United States and societies elsewhere. These courses should challenge the assumptions with which many students come to college—about what it means to be an American, about the persistence and diversity of American values, about the relations among different groups within the United States and between the United States and the rest of the world. They will help students to understand this country as a heterogeneous and multifaceted nation situated within an international framework. Courses on The United States in the World help to prepare students for civic agency by framing the study of social, political, legal, and economic institutions of the United States in a historical and/or comparative context.

Courses may adopt a variety of disciplinary approaches to the examination of economic, political, and legal systems and social relations. Courses may also treat cultural practices or religious traditions, by showing their effect on the way American society has been structured. In effect, courses in this category complement courses in Societies of the World, looking at the United States itself, and from the United States outward. Whether courses consider the subject in a historical or a contemporary context, they must make connections between the material studied and the kinds of issues involving American social, political, legal, and economic institutions that students are likely to confront in an era of globalization.

There are many topics of wide practical and intellectual interest that courses in The United States in the World might explore, including income disparity, health care and the state, affirmative action, immigration, election law, zoning and urban sprawl, red state-blue state, bilingualism, originalism and the interpretation of historical documents.

Courses on The United States in the World should:

- examine American social, political, legal, and/or economic institutions and practices, from contemporary and/or historical perspectives;
- demonstrate connections between those institutions and practices and those of other societies of the world; and
- connect the material studied to the kinds of social, political, legal, or economic issues students are likely to confront in an era of globalization.

IV.

ACTIVITY-BASED LEARNING: AN INITIATIVE

EXTRACURRICULAR ACTIVITY IS A HARVARD success story. The College offers literally hundreds of activities and programs, from the *Crimson* and a multitude of undergraduate musical and theatrical productions to the volunteer opportunities offered through the Phillips Brooks House Association. Sixty percent of our undergraduates report that they engage in some type of public service while they are here. Last year, almost twelve hundred students—one fifth of the entire student body—participated in a Harvard-sponsored international experience. Students participate in the visual and performing arts, work on political campaigns and in campus government, and do internships of all kinds. Many students work in research laboratories.

Few formal procedures exist for encouraging students to see the connection between what we teach in the classroom and the activities that absorb so much of their energy and that, in many cases, will launch them in the direction of their life's work. Yet connections do exist. We propose that the Faculty appoint a committee to develop an initiative in activity-based learning. The goal would be to help students see how what they learn in class informs what they do outside of class and vice versa. We do not seek to bureaucratize extracurricular life at Harvard; we do seek to provide means for students to enrich both their classroom and their extracurricular experiences by forging an intellectual link between them.

There are many details to be worked out for such program. We therefore propose that the Faculty establish a committee (composed of FAS faculty, relevant College administrators, members of the professional schools, and students) to formulate an activity-based learning program. The committee would establish mechanisms for activity-based learning—for example, by inviting faculty to offer, as an optional requirement, a paper or exercise that illustrates how the course and an out-of-class activity inform each other. The committee would also address intellectual and implementation issues: Who will manage the individual projects? How will they be evaluated? Should all students be required to participate? Should the work be graded or ungraded? How might we profitably engage professional school faculty in this initiative? The committee would make formal recommendations for a pilot program and would later evaluate its success.

We recognize that the logistical issues that confront mounting a program in activity-based learning are serious. But there is a tendency on the part of many students to regard their extracurricular life as separate from their academic experience. We believe that we should find ways of bringing those aspects of undergraduate life closer together. If part of the purposes of a Harvard education is using liberal learning to prepare students for life, activity-based learning makes a natural piece of it.

V. IMPLEMENTATION

ALTHOUGH THE DETAILS OF THE IMPLEMENTATION and administration of a new general education program are beyond the purview of our Task Force, we offer some recommendations based on the content of our proposal and on conversations with colleagues over the course of its development.

A. COURSE DEVELOPMENT

The success of a general education program depends on many things, but the bottom line is great teachers offering great courses. It will take time, imagination, and resources to accomplish this: teachers need to be recruited from the Faculty, courses need to be developed with the new guidelines for general education in mind, and departments need to be involved in mounting departmental courses for general education credit. A new system should not be instituted too quickly: this should not be a matter of moving existing courses into new curricular pigeonholes. A number of existing courses may, with relatively little adjustment, fit readily into the new general education curriculum, but an effective launch of the program requires exciting new courses. We therefore call for a major commitment of resources to the development of a substantial menu of courses for general education.

B. ADMINISTRATION

We recommend that the General Education program be directed by a member of the Faculty. We further propose the creation of a new Standing Committee on General Education, composed of faculty members who will serve as the chairs of subcommittees charged with oversight of one or more of the general education categories. The committee should also include the Dean of the College, the Dean of the Graduate School, the Dean of the Faculty of Arts and Sciences, and student representatives. Because the general education categories do not map onto departments, the subcommittees should each include faculty from a variety of departments and from all divisions.

The Standing Committee (and its subcommittees) would be charged with the following responsibilities:

- recruit faculty to develop new general education courses;
- identify existing courses suitable for general education and, when necessary, assist faculty in modifying those courses to meet the criteria for general education courses;
- recommend that instructors make use of opportunities for pedagogical innovation;
- recommend to the Dean of the Faculty that resources be allocated to general education course development;
- appoint a separate committee to administer a regular five-year review of all general education requirements and offerings, including the definition of the subject areas and the criteria for courses offered in those areas.

The Standing Committee on General Education (and its subcommittees) should not impose a one-format-fits-all standard (amount of reading, number of exams, and so on) on general education courses. There should be both a set of general education courses listed in the front of the course catalogue that students can take to fulfill their general education requirements *and* an ample number of departmental courses available that have been designated by the Standing Committee as meeting the criteria for general education. Students should be able to fulfill their general education requirements with courses they *want* to take.

Departments should be actively involved in recommending courses for general education. The Standing Committee should therefore work not only with individual faculty members, but also with department chairs to encourage their faculty to develop both general education courses for the front of the catalogue and departmental courses that provide general education credit for concentrators and non-concentrators alike. Students should be able to double-count courses (whether they are “front-of-the-catalogue” courses or departmental courses) for both concentration and general education credit, as approved by the Standing Committee and the departments in question.

The Committee should also encourage colleagues to explore the possibility of teaming with faculty members from other Schools at Harvard. We believe that the issue of how Harvard’s different Schools relate to each other financially should not impede an improvement in the education of our undergraduates or an enhancement of opportunities to do new kinds of teaching. We call on the leadership of the University and of the individual Schools at Harvard to lower the barriers for interested professional school faculty to teach in the general education curriculum.

Where appropriate, efforts should be made to provide small classes in general education courses, and to enable and encourage greater student-faculty interaction, teaching fellow participation, and active learning experiences for students. Courses approved for general education credit should receive extra administrative support comparable to the ex-

tra support now enjoyed by courses in the Core.

Finally, history shows that general education programs can lose their focus over time. Why one course counts toward the general education requirement and an apparently similar course does not can start to become difficult to understand for both faculty and students. And there is a tendency for general education courses to become narrower and more specialized. It may also be the case that as the world changes and as knowledge and the way we pursue it change, the Faculty will want to make appropriate changes to the subject areas and course criteria. We therefore recommend that the general education curriculum be subject to review every five years by a committee composed of members of the Faculty (with student representation) who are not also members of one of the General Education committees.

C. GRADUATE TEACHING

A new curriculum naturally demands consideration of its impact on the ability of our graduate students to find teaching opportunities. Because the system we propose is not geared to departments within the College, it may seem to create a condition of uncertainty in this regard. However, we urge the Faculty to undertake to decouple graduate student compensation from any particular kind of teaching. We need to train graduate students and to enlist them as partners in all kinds of teaching, including new pedagogies that stress activities and hands-on group and laboratory experiences. We should realize that our promises to support third- and fourth-year graduate students in the social sciences and humanities through teaching experience, training, and related forms of professional development will be kept, but we should develop a richer array of opportunities, based on the needs of the undergraduate curriculum, and not rely on rigid standard types of teaching, such as sections in large lecture courses. The more varied their teaching experience is during graduate school, the more resourceful and effective our Ph.D. students will be when they develop courses of their own as professors.

CONCLUSION

IN FORMULATING THE PROPOSALS IN THIS REPORT, we have had firmly in mind the distinctive character and expertise of our faculty, the content of our undergraduate curriculum, and, above all, the interests, talents, and needs of our students. The program offers students flexibility within a structure of requirements and provides faculty with opportunities to find imaginative ways of teaching their areas of specialty to students who may not be or become specialists themselves. It emphasizes subject matter, rather than academic disciplines, and it seeks to inspire lifelong interest in that subject matter with a pedagogy that relates material studied in the classroom to issues and problems of wide concern to undergraduates. As does every part of a liberal education, it seeks to equip students with critical attitudes, skills, and knowledge that they can apply everywhere in their lives. Our proposal is consistent with past general education programs at Harvard: it prescribes a set of requirements and calls for a set of extra-departmental courses, rather than advocates that students have free range across existing departmental offerings in the form of an open distribution system. Since 1945, our Faculty has believed in the importance of taking a stand on the question of what students need to learn. General education is a statement about why a liberal education matters.

The Task Force on General Education
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