

EDUCATIONAL LEADERSHIP AT THE BEGINNING OF THE 21ST CENTURY

Final Report of the
Core Curriculum Review Committee
to the
Texas A&M University Faculty Senate

March 28, 2000
Revised by the Faculty Senate May 8, 2000

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Executive Summary (Corrected)

The Core Curriculum Review Committee (CCRC) was created by the Faculty Senate in February 1999 and charged to undertake a thorough review of core curriculum and general education requirements at Texas A&M University. In approaching this task, the CCRC has engaged in the following activities: (1) reviewed relevant TAMU and state documents pertinent to undergraduate education; (2) identified 15 other universities, predominantly major public institutions, and surveyed their various approaches to general education requirements; (3) conducted interviews with all Academic Operations Committee (AOC) deans and several other administrators; (4) heard testimony from a number of faculty and department heads during two weeks of open hearings in summer 1999 and on other occasions; (5) visited with all college-level undergraduate curriculum committees and many college student councils; (6) hosted an Open Forum (November 1999) that was announced in *The Battalion* and to which all students were invited; (7) created and distributed an e-mail survey sent to some 900 1994 graduates of Texas A&M; (8) held more than 35 committee meetings totaling more than 60 hours of discussion and deliberation; and (9) wrote and distributed a Preliminary Report to which University faculty, students and administration were invited to respond.

Guided by all of the above activities and by its belief in the importance of the Core Curriculum to the mission of Texas A&M and its students, the Committee makes a number of recommendations in the following areas: (1) a series of specific recommendations on courses and hours to be taken by all students within the TAMU Core Curriculum; (2) several recommendations regarding graduation requirements to be fulfilled in high school or during a student's university years; (3) recommendations on measures to be undertaken to strengthen Core Curriculum offerings through the creation of cross-disciplinary courses and new courses designed for the core, and through more consistent and purposeful action to improve instructional quality; (4) recommendations regarding Core Curriculum course development incentives; and (5) recommendations to assure a regular and effective assessment of the Core Curriculum.

We recommend a TAMU Core Curriculum of 45 hours. Equally important are the related recommendations identified above and described more fully in the Final Report, including the completion of two writing-intensive ("W") courses beyond the Core Curriculum requirement, completion of six hours of International and/or Cultural Diversity courses to be taken as part of existing Core requirements, and the completion of three years of foreign language study in high school or one year at the university. Texas A&M must commit resources in support of these goals and in support of faculty efforts to enhance the Core through more effective instruction, more meaningful courses, and fewer large sections.

Finally, TAMU should put in place a Core Curriculum Council (CCC) to provide ongoing oversight, assessment, and promotion of the Core Curriculum.

I. HISTORY AND CONTEXTS

Appointment of the Committee and Committee Membership

The Core Curriculum Review Committee (CCRC), a subcommittee of the Executive Committee of the Faculty Senate, was appointed by the Senate to begin its work effective February 15, 1999. The CCRC was charged to do the following:

The Core Curriculum Review Committee is charged to study carefully the concept of a core curriculum and ultimately to develop a university undergraduate core curriculum designed to meet the current needs of Texas A&M students and to be flexible enough to meet the developing and future needs of our students as well. The Committee shall provide a clear rationale for the entire core as well as for the individual components of the proposed core.

The Committee shall also develop an assessment procedure or series of procedures to determine the degree to which the core curricula needs of undergraduate students are in fact being met. The Committee shall also suggest a procedure for periodic review and revision of the University core curriculum.

As further instruction to the Committee, the Faculty Senate charged the CCRC to undertake nine specific areas of activity, including review of appropriate materials, examination of core curricula and general education requirements at other institutions, and testimony from faculty, administrators, students, and former students (see Appendix A for Committee membership and Appendix B for the Committee's charge). Reading the discussion of our activities since our appointment will confirm that we have been attentive to each of these areas of responsibility.

The CCRC was established in response to one general concern and two quite specific actions. In the first instance, the Texas A&M University Core Curriculum, established following a report (November 1985) of an earlier Core Curriculum Committee, has never been comprehensively reviewed and reassessed. In addition to this more general motivation for a full-scale review, recent action by the Texas Higher Education Coordinating Board (THECB) and the TAMU Faculty Senate has made this review imperative. The THECB, responding to S.B. 148 of the 75th Texas Legislature, established and mandated a statewide core curriculum of at least 42 hours, and required that each public institution of higher education (1) show a good faith effort toward achieving compliance with the state mandate beginning September 1998, and (2) have in place an approved core by the Fall 1999 semester. In response to the state mandate, the Core Curriculum Oversight Subcommittee (CCOS) made two recommendations that were approved by the Faculty Senate: (1) to establish a 48-hour Core Curriculum that was, in the main, a continuation of the University Core Curriculum already in place (the three areas noted as requiring change were humanities, foreign language, and computer usage); and (2) to "[p]roceed with a complete review of the core curriculum in the near future" (CCOS Report, September 21, 1998).

Early Deliberations

The CCRC first met on March 25, 1999. At this meeting, then speaker of the Faculty Senate Diane Kaplan reviewed the Committee's formal charge, contained in a Senate document dated February 8, 1999. The committee chair presented a timeline for our activities, extending through the calendar year and including meetings with virtually all segments of the TAMU academic community--college deans, college curriculum committees, students, and expert faculty as needed. We discussed the history and aims of the TAMU Core Curriculum, and reviewed the 1998 legislative mandates that required a common set of Core courses for all Texas institutions of higher education.

The Committee met four more times before June 1, primarily to gather and review materials pertinent to deliberations. We discussed the following documents:

1. Four earlier reviews of the TAMU Core:
 - a. Report of the Core Curriculum Committee, November 1985 (the original Core Committee report)
 - b. Final Report of the Multiple Missions Task Force, TAMU, May 1991
 - c. Core Curriculum Assessment Study Group, TAMU, August 1992
 - d. Report of the Statewide Core Curriculum, Core Curriculum Oversight Committee, TAMU, 1998.
2. *Vision 2020: Creating a Culture of Excellence* (1999)
3. "Core Curriculum: Assumptions and Defining Characteristics," Texas Higher Education Coordinating Board, April 1998
4. "Report of the Advisory Committee on Core Curriculum," Texas Higher Education Coordinating Board, 1998
5. "Changing Employment Demands and Requirements for College Graduates: Focus Group Interviews with Industry, Agency, and School District Representatives in Texas" (Strategic Policies Research Group [Mary Zey, Alvin Luedke, Steve Murdock]) TAMU System, January 1999

These documents helped us understand the legislature's actions and provided both a rich historical context and a view of future needs. In addition, we frequently consulted the TAMU Undergraduate Catalog with an eye toward those sections that are pertinent to Core Curriculum expectations and requirements.

We selected fifteen peer institutions, using lists in the *Vision 2020* report and our own judgment, and developed a set of questions to ask each institution regarding its core curriculum. Members gathered data and presented written reports on each school, including the University of California at Berkeley, the University of Illinois, the University of Michigan, the University of Wisconsin, the University of California at Los Angeles, the University of North Carolina, the University of California at San Diego, the University of Florida, Georgia Tech University, Rice University, The Ohio State University, Duke University, the University of Texas, Pennsylvania State University, and the University of Chicago. We compared the successful undergraduate curriculum revision at Duke with the unsuccessful revision at Rice, and found that a key to

success was wide discussion and faculty involvement.

The chair met with Provost Douglas, Speaker Kaplan, and Associate Provost Weichold to determine available resources for curriculum revision. He met with AOC deans and arranged individual interviews with them. He scheduled summer meetings and developed a more detailed timetable for consulting with various campus groups.

On May 20, we held our first of many meetings with faculty, this time to discuss writing and communication across the curriculum with Valerie Balester and Jimmie Killingsworth of the English Department and Rick Street of the Department of Speech Communication. These initial meetings and deliberations helped us to define topics and to prepare for the further discussions and interviews that we scheduled in the summer and fall. We developed a list of questions to guide our summer meetings (Appendix C), and identified some key themes and issues, including but not limited to writing across the curriculum (WAC), kinesiology, the size of the Core, cross-disciplinary courses, and courses designed specifically for the Core.

II. MEETINGS, INTERVIEWS, AND SURVEYS

Since its initial meeting on March 25, 1999, the CCRC has met as a committee in more than 35 different sessions totaling more than 60 hours of committee deliberations. Beyond this, and equally important, the CCRC has actively sought advice and counsel from all areas of the University community. Specifically, we have done the following:

--conducted individual interviews with each AOC dean responsible for undergraduate education. AOC deans were invited to speak to us about any dimension of the Core Curriculum and were invited, as well, to respond to specific questions the CCRC believed to have broad significance for all of the University (Appendix C).

--hosted two weeks of open sessions in the summer (July 26-30 and August 9-13) at which any faculty member or administrator was invited to speak to us. These scheduled sessions were announced in various forums and through Distribution List A and totaled 20 hours set aside for the Committee to make itself available to faculty and administration. Among those who spoke to us during the summer sessions or on some other occasion were a number of department heads with particular interest in Core courses (e.g., English, Mathematics, Statistics, Modern and Classical Languages, Health and Kinesiology), several key administrators (e.g., the Executive Director of Admissions, the Executive Director of the Honors Program, the Associate Provost for Information Technology) and faculty members addressing many different areas and concerns.

--met with each college curriculum committee or committee of undergraduate advisors. These sessions were held in each college at a time designated by the college committees so as to assure maximum participation. Exchanges were open, frank, and informative.

--**met with college-level student councils.** Not all colleges have student councils, but one or more CCRC members met with student councils in their respective colleges.

--**hosted, along with Student Government, an Open Forum in the Flag Room of the MSC (November 10, 1999), to which all students were invited.** This Forum was arranged by leaders of Student Government, who publicized the Forum to various student constituencies; it was also announced in *The Battalion*, which has also published other articles about the Committee's ongoing review.

--**created and distributed an e-mail survey to 1994 graduates of Texas A&M regarding their undergraduate education.** This survey, supported by the Office of the Provost and the Association of Former Students, was sent to all 1994 graduates with a known e-mail address. The year 1994 was chosen for two reasons: we could be reasonably certain that 1994 graduates would have completed the Core Curriculum as a requirement for graduation, and we could expect that, five years away from their graduation, they would have informed perspectives on the value of their undergraduate experience. Our best estimate is that the e-mail survey was delivered successfully to 900-1000 students, who were asked both to fill out a survey form posted on the web and to send to the Committee written comments about their undergraduate education (see Appendix D for the survey and tabulated results). We received 281 completed surveys (an approximate 30% rate of return) and a number of written comments. The survey asked these former students to respond to a number of questions about their undergraduate education. It did not identify the Core Curriculum as such since that term may not have meaning to students who might nonetheless comment in an informed way on their undergraduate education experiences. As the survey items indicate, graduates were not asked explicitly to endorse or not endorse Core subjects, but they were asked to indicate their relative satisfaction or dissatisfaction with a number of subject areas. The CCRC found the responses of former students to be useful yet also fairly wide-ranging, and they were among many observations and comments that helped guide the committee in its deliberations.

In addition to these activities, committee members actively sought comments and suggestions from colleagues, and the chair of the Committee met with the Provost, the Associate Provost for Undergraduate Programs and Academic Services, the Academic Operations Committee (AOC), the President of the Student Body, and the Speaker of the Student Senate.

In short, the CCRC has been committed to conducting an open and inclusive review, involving, to the best of its ability, everyone at the University who wished to make comments and offer suggestions about the Core Curriculum.

III. PRELIMINARY REPORT

In February 2000 the CCRC completed and submitted to the Faculty Senate a 32-page Preliminary Report that described its activities during the previous year and identified a series of

recommendations endorsed by the committee. The Report was preliminary in two ways: first, some sections of the report were to be expanded or made more specific; and, second, the committee invited responses from the University community to its many recommendations with an understanding that each recommendation would be reconsidered and informed by responses and concerns expressed by faculty, students, and administration.

The Preliminary Report was on the agenda of the Faculty Senate meeting on February 14, 2000, and the committee chair was invited to speak to the Senate and to respond to questions at that time. A hard copy of the Report was sent to all Senators; the TAMU President, Provost, Associate Provost for Undergraduate Programs and Academic Services, the Dean of Faculties, and other University administrators; Deans of all of the colleges; the President of the Student Government Association and other student leaders; and various other University officers who regularly receive copies of the Senate agenda and attachments. In addition, the Report was posted on the Faculty Senate website. Subsequent to the Senate meeting, the CCRC received a number of responses--made orally, in writing, and through e-mail--to its report and met during the weeks of March 6 and March 20 to review those responses and to reconsider its recommendations. This Final Report is in most respects a reaffirmation of that Preliminary Report, but it also reflects changes made as a result of comments received from the University community.

IV. PHILOSOPHY AND RATIONALE OF THE CORE CURRICULUM

The CCRC has been attentive to various discussions relevant to the philosophy of and criteria for general education requirements in a university. We recognized the work of previous Faculty Senate committees including the Core Curriculum Report of 1985 that outlined the extensive body of literature and national experiences regarding the value of a liberal, general education of students in higher education. The Core Curriculum findings quoted the report of the Study Group on the Conditions of Excellence in American Higher Education entitled *Involvement in Learning; Realizing the Potential of American Higher Education*. The report concluded that “the best preparation for the future is ... an education that will enable students to adapt to a changing world.”

Successful adaptation to change requires the ability to think critically, to synthesize large quantities of new information, and to master the language skills (critical reading, effective composition, clear speech, and careful listening) that are the fuel of thought. Adaptation to change requires that one draw on history and on the experience of other nations, and that one apply the theories and methods of empirical investigation. It requires a disposition toward life-long learning and the ability to partake of and contribute to the richness of culture and citizenship of our Nation. These requirements are as relevant to the future medical technician in training at a community college as they are to the biology

major at a university. To fulfill them is to achieve a liberal education. (Study Group on the Conditions of Excellence in American Higher Education, 1984)

An earlier report entitled *The Quality of Baccalaureate Education: Expectations and Measures* (1981) outlined characteristics of a well-educated person. These characteristics included:

1. An inquiring attitude which acknowledges the many-sided nature of most important questions, recognizes the need to examine inherited judgments, and reveals a desire for continued learning and creative expression.
2. Competence in the processes of learning, including the ability to read and listen, a knowledge of logic and scientific method, and the mental discipline needed for rigorous, critical analysis and synthesis of facts and ideas.
3. The ability to use words and numbers accurately and effectively, and communicate clearly through the spoken and written word as well as through the symbols of mathematics.
4. An historical perspective provided by familiarity with the most significant events, people and achievements of the past; an understanding of the most enduring ideas and values in human history and a knowledge of the many ways these are expressed in major world cultures and in social, political and economic institutions.
5. A general knowledge and appreciation of nature, science and technology.
6. A general knowledge and appreciation of the fine and performing arts and of literature.
7. An understanding of self, along with empathy for the strengths, weaknesses, rights and needs of others, as well as the ability to relate to others with human understanding.
8. An appreciation for the responsibilities of the individual to family and society; skill in serving as a constructive member in groups and organizations; sensitivity to the need for informed, independent moral and ethical decisions.
9. Knowledge of the economic and geographical interrelationships of regions and nations and their resources.
10. Thorough, up-to-date knowledge and skill in a chosen discipline or profession.

These characteristics of a well-educated person mirror the defining characteristics of basic intellectual competencies and perspectives outlined in the document prepared by the Texas

Higher Education Coordinating Board (1998) entitled “Core Curriculum: Assumptions and Defining Characteristics.” The THECB report recognized competencies in reading, writing, speaking, listening, critical thinking, and computer literacy. In addition the THECB document described subject matter imperatives through multiple perspectives, including the relationship of individuals to society and the world, the capacity to integrate the socio-political understandings of our society, recognition of maintenance of health and wellness, understanding the role of technology and science in our lives, ethical behavior, the ability to make aesthetic judgments, logical reasoning in problem solving, and understanding the interrelationships of scholarly disciplines.

We did not undertake this year-long quest to determine if a common, liberal education is needed on our campus. Our Committee fully subscribes to the work and rationale outlined by the initial Core Curriculum Committee (1985), the report on *The Quality of Baccalaureate Education: Expectations and Measures* (1981) and the THECB report (1998) on “Core Curriculum: Assumptions and Defining Characteristics.” We did, however, seek to determine if our current Core Curriculum should be changed to meet needs identified in these historic documents and by faculty, administrators, and students on our campus. To place our effort in today’s context, we sought to answer the question: Does our current Core Curriculum enable our students to achieve the educational breadth necessary for the challenges outlined by *Vision 2020*?

The teaching mission of TAMU is a subject for little debate. The state legislature, the public, the faculty, and students are in broad agreement that the University should provide instruction in (1) specific disciplines and (2) those subjects that are widely understood to reflect a liberal, general education. The latter include, at a minimum, education in the political, logical-scientific, historical, and philosophical underpinnings of our civilization and way of life, and for perspective, in other civilizations and ways of life. The agreement between the public and the academy extends to proficiency in communication so that the insights and mastery students acquire in their disciplines can be put to full use.

Our work has been tempered by realizations that students have limited resources and a finite amount of time in which to complete their academic work at the University, and that certain disciplines are constrained by accreditation pressures on subject-matter hours. In addition, the THECB requirements for a common statewide core curriculum among universities and community colleges precluded certain options. Further, we necessarily recognized that, in some instances, students who complete a core curriculum at a community college and transfer to Texas A&M may not graduate from TAMU with entirely comparable academic experiences—for example, in mathematics. Because of these constraints our Committee has expanded the concept of a core curriculum from a set of common courses to a suite of academic experiences necessary for graduation. In some instances these experiences may be accomplished within subject-matter disciplines, as in the case of the communications requirement, or may be accomplished in high school, as with the foreign language and computer usage graduation requirements. We feel the latter approach effectively ties the educational experiences of public and private high schools with the educational mission of TAMU.

The Committee had strong support from multiple sources (e.g., Strategic Policy Research Group [1999], *Vision 2020*), as well as numerous faculty and administrators, for building student skills in writing and communication. In addition, we recognized the growing importance of the global environment and changing demographics of our state (Strategic Policy Research Group, *Vision 2020*). The need for enhanced communication skills, and the necessity for our students to be prepared for work in culturally diverse state and world societies, required our Committee to look “outside the box” to find acceptable strategies to address these areas. In the case of communications we have chosen to build on basic writing and communications skills taught in the Core by the English and Speech Communication Departments by adding graduation requirements for writing instruction in two writing-intensive (“W”) courses. In order to expand our students’ understanding of cultures outside their personal experiences, we have chosen to address the compelling charge from *Vision 2020* by requiring a total of 6 hours of International and/or Cultural Diversity courses. To ensure flexibility we have recommended that students may receive credit for this category with enrollment in courses that satisfy another Core category, through certain international study or work experiences, or by courses in a foreign language. Again, with the latter requirement, we have chosen to focus on academic experiences and not the addition of hours to the Core.

The logical and scientific aspects of the Core Curriculum were the subject of considerable discussion. What makes a course primarily logical-foundational, as opposed to factual-practical? Are broad, overview courses in the sciences better for students whose only exposure to science will be through the Core, than introductory courses intended also for majors in the discipline? For the Mathematics Core, we chose to retain a two-course, six-hour requirement. We also provide guidelines for the inclusion of courses that would fulfill this requirement. With the Science Core we recommend continuation of the eight-hour requirement. Our Committee agreed with the THECB (1998) statewide Core Curriculum report that noted that students should understand and evaluate relationships in the natural sciences, and should learn the basis for building and testing theories. We believe that science courses that are part of the Core should expose students to the basic tenets and concepts associated with the specific discipline. In addition, these courses must outline the process of doing science. The “facts” of the science Core course may not be as important as the way each discipline comes to understand the world.

The Core requirements in the humanities and social sciences were less debatable, and the Committee tended to take a status quo attitude concerning them. Requirements in the visual and performing arts, like those in history and political science, were essentially beyond the purview of the Committee, or even the University. We have maintained the present numbers of required hours in the humanities, arts, and social sciences, but have added important opportunities for student choice.

The institutional option to require several hours of kinesiology was debated vigorously. Ultimately, the academic necessity of this requirement was deemed unproven, and we thus chose to recommend reducing this requirement to a single one-hour health and fitness course.

Our work led us to recognize the need for courses that span disciplines and bring, for example, the understandings of the liberal arts, sciences, and business to bear on critical

problems of our times. Few such broadly defined cross-disciplinary courses exist on our campus. We believe such courses could be an important asset to the Core experiences of students. We have recommended mechanisms to encourage the development of these approaches. After all, most critical problems of our times are not solved solely by a single discipline. Likewise, we recommend that Core offerings in the various departments at TAMU should be evaluated to determine whether new “Core-directed” courses should be developed. The University should encourage, through aggressive incentives, the development of Core courses and/or Cross-Disciplinary courses.

Because of the centrality of the Core Curriculum to the educational mission of the University, our Committee strongly believes that the quality of Core offerings and experiences should be regularly assessed. The substantial impact of the Core on a student’s education mandates that the quality of the Core Curriculum be carefully maintained. It is not sufficient to review the Core every decade and assume that a coherent philosophy of learning will be assured. We have recommended the formation of a Core Curriculum Council to identify and validate measures of core curriculum quality and to implement processes for continuous improvement. Further, we see major responsibilities of this Council to include implementation oversight, outcomes assessment, and promotion of excellence. Given the findings of *Vision 2020*, we believe that it is imperative that the University provide resources necessary to achieve the vision of excellence for the 21st century we have outlined in this report. Resource needs will include, at a minimum, expenditures for a Writing Resource Center, course development incentives, and additional faculty to lower Core Curriculum class sizes and to meet foreign language and writing instruction needs. We believe that the ability of our students to meet significant state needs, and to participate in the important decisions of our global society, requires that the Core academic experience of our student body be exemplary.

V. CONSIDERATIONS AND RECOMMENDATIONS

Informed by all of the activities and considerations described above—its review of pertinent studies and documents, the testimony of many faculty, administrators, students, and former students, its ongoing discussion of the philosophy and rationale of a core curriculum—the CCRC proceeded to establish more focused discussion points that resulted first in the Preliminary Report previously distributed and now in the final recommendations that follow.

In most instances, we worked initially through small subcommittees, each of which was asked to approach its topic through a consideration of philosophical questions, broader issues, and recommendations. In a few instances the Committee worked as a whole to address pertinent topics. As several of the discussions below indicate, we have been determined to maintain a focus, not simply on individual Core categories, but on crucial larger questions as well—such as instructional quality, the potential for cross disciplinary courses, and the value of developing courses specifically designed for a broad Core Curriculum audience. Read as a whole, the recommendations that follow address each of the Core categories mandated by the state and those that presently constitute the TAMU Core Curriculum. But we have taken seriously the

essence of our original charge “to study carefully the concept of a core curriculum and ultimately to develop a university undergraduate core curriculum designed to meet the current needs of Texas A&M students and to be flexible enough to meet the developing and future needs of our students as well.” To say it more simply, faced with a choice of merely “tinkering” with the Core Curriculum or undertaking a serious and thoughtful review, we have emphatically chosen the latter course, as our many meetings, interviews, and discussions, as well as the recommendations that follow, confirm.

The CCRC strongly endorses the Final Report. Although on some issues there is clear dissenting opinion, the recommendations of the Committee were generally approved either unanimously or by a wide margin.

No particular value should be placed on the order and relative importance of the discussions and recommendations that follow, except in one particular instance. We realize that the implementation of several of our recommendations requires the commitment of University resources. The Committee believes unanimously that the first and clearest commitment should be to strengthening the communication skills of our students, and thus we begin with a discussion of Writing, Oral Communication, and Writing Centers.

Writing, Oral Communication, and Writing Centers

The need for more effective delivery systems for instruction in written and verbal communication hardly requires more emphasis. In the information the CCRC has amassed over our tenure, no other suggestion for improvement of the Core has been mentioned as frequently or with such fervor. From our own deliberations and our review of various reports and findings, the expressed desire for a rethinking of the manner and extent to which we reinforce communication skills has been consistent and strong.

We need to be reminded that good communication skills are not only essential for academic success but are also of paramount importance in the post-academic world. This is increasingly the case in the world of cyber-commerce, where the ability to write and speak clearly and persuasively will be a skill in high demand. As faculty we owe it to our students, regardless of discipline, to assist them in becoming better communicators.

In addition, writing supports active learning in all fields; when all segments of the institution reinforce the value of writing, students write (and hence think) more, and more effectively. Writing, as one observer has noted, is learning made visible.

The current six-hour communications requirement at Texas A&M aims to impart and reinforce the "ability to communicate through the use of the spoken or written word." Of course, this ability is fostered in other courses as well, as our students are required to express themselves both in writing and orally, including through term papers and oral reports. Still, the extent of a TAMU undergraduate's involvement in formal communication instruction is less, and in many cases considerably less, than that required in other major universities.

Recommendations for Writing, Oral Communication, and Writing Centers

In view of these considerations and concerns, and in keeping with our view that enhancing the communication skills of our students is a matter of the highest priority, we believe that Texas A&M University should:

1. Acknowledge that (A) the aspirations of this University, as articulated in documents such as *Vision 2020*, will not be realized without aggressive and pervasive changes in instruction designed to teach our students to communicate effectively; (B) other colleges and universities have invested in such approaches as writing centers and Writing-Across-the-Curriculum (WAC) to address these concerns; and (C) instruction in writing and speaking is not limited to the Departments of English and Speech Communication and that writing and speaking in courses in a student's major are also essential.
2. Maintain the current six-hour communications requirements of the Core: ENGL 104 and three additional hours in ENGL or SCOM.
3. Require that students complete ENGL 104 no later than the end of their freshman year and complete the Core communications requirements, including courses in scientific and technical writing, before the end of their junior year. Resources must be allocated to accomplish these aims.
4. As a complement to the six-hour communications requirement, require additional writing instruction in two writing-intensive ("W") courses. Each of these courses should include approximately one semester-hour of writing instruction, and the course must be graded accordingly on the level of demonstrated writing skill. To allow as much flexibility as possible in meeting this requirement, "W" courses can be provided in a number of ways, for example, by adapting existing courses, by designing new courses specifically for the purpose, through "capstone" courses, or through preparation of a senior thesis with an appropriate component of writing instruction. "W" courses can be proposed by any department and will be approved and monitored by the Core Curriculum Council, as described elsewhere in this document.
5. Establish a new graduation requirement: students must complete two "W" courses. The intent of this requirement is to develop writing skills appropriate to the major field of study; we therefore encourage departments to develop their own "W" courses.
6. Establish and fund a Writing Resource Center accessible to all students and faculty. The Center will be administered by an appropriate university authority, will provide support for faculty to develop writing-intensive courses, and will offer additional instruction for students in writing courses. College-level access is crucial, and mechanisms should be developed to assure such access.

7. Because informed and continuing professional support is essential for faculty who will plan and teach “W” courses, the Writing Center must be in operation before instituting the writing course requirement. The University must provide resources that allow the Writing Center to offer course planning grants and other incentives to help faculty design writing-intensive courses and must provide continuing resources for assistance in grading. The University, in consultation with the Core Curriculum Council, will ensure that a sufficient number of “W” courses are available in various disciplines before students are required to take them.
8. Guidelines for the inclusion of a course in the Communications Core: Courses appropriate as Communications Core courses are ENGL and SCOM courses in which the ability to write and/or speak is a major component of the semester grade.

Mathematics

The purpose of courses in the Mathematics Core is to develop a quantitatively literate college graduate. Every college graduate should be able to apply basic mathematical tools in the solution of real world problems. Courses in the Mathematics Core should imbue students with the quantitative reasoning ability that will allow them to effectively function in an increasingly technical society. Students should be able to understand quantitative information and its presentation and be able to follow, and critique, logical and quantitative arguments.

Recommendations for the Mathematics Core

1. TAMU should retain a two-course, six-hour Mathematics Core requirement, one course of which must be from the Mathematics Department. Both courses should give major weight to the reasons underlying calculations and the internal logic of formulas and methods.
2. Students should be required to complete the Mathematics Core no later than the end of their sophomore year.
3. Guidelines for the inclusion of a course in the Mathematics Core: Courses appropriate as Mathematics Core courses are courses from philosophy that contain a rigorous presentation of symbolic logic, and mathematical courses that include mathematical or statistical thinking that goes beyond the "college algebra or trigonometry" level and examines the internal logic of methods and formulas studied. Courses such as PHIL 240, MATH 141 and STAT 211 meet the stated philosophy and would satisfy the requirement. MATH 102 would not, while STAT 302 would require some modification to be acceptable.

Science

Six hours of science are mandated in the statewide Core; Texas A&M has, from the establishment of the first Core Curriculum, required eight hours, including at least one course with a corresponding laboratory. The CCRC discussed and heard testimony about the science component in the Core and reaffirms the importance of an eight-hour requirement. Much of our discussion, prompted especially by testimony from several science faculty, focused on the most effective ways to teach science in the context of a Core Curriculum aimed at all students, science majors and non-science majors alike. We agree that the University ought to encourage the development of new courses, cross-disciplinary courses, and revised courses that more fully meet the expectations of Core courses—in the sciences and in other disciplines as well. Our considerations and recommendations about these matters are folded into discussions that follow on Cross-Disciplinary Courses and the Development of New Courses Designed for the Core.

Recommendations for the Science Core

1. The current eight-hour science requirement, including at least one course with a corresponding laboratory, should be retained.
2. Guidelines for the inclusion of a course in the Science Core: Courses approved as science courses in the Core Curriculum should, as stated in the Texas Higher Education Coordinating Board report of April 1998, “enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories” (p. 6).

Humanities, Visual and Performing Arts, and Social and Behavioral Sciences

For years students in public higher education institutions in Texas have had to complete a Citizenship requirement of six hours of American history and six hours of political science, taken typically at Texas A&M as HIST 105 and 106 (History of the United States) and POLS 206 (American National Government) and 207 (State and Local Government). In our review of other universities’ core curricula, we found only one example outside the state of Texas where such a state-wide requirement exists. We therefore encourage University officials and others to seek legislative authority for greater flexibility and university decision-making with regard to this requirement, and we recommend that the current requirement be interpreted so as to maximize flexibility and student choice among a number of courses. For example, more than 30 History courses other than 105 and 106 will satisfy the state-mandated requirement in American history, including HIST 300 and 301 (Blacks in the United States), HIST 319 (U.S. Immigration and Ethnicity), HIST 365 (History of Religion in America to 1860), HIST 470 (American Business History) and many others.

In addition to the twelve hours of history and political science, the state-mandated core requires one course in the humanities, one in the visual and performing arts, and one in social and behavioral sciences. The present Texas A&M Core Curriculum adds to these state

requirements an additional course in social and behavioral sciences. The CCRC believes that all students must have a fundamental understanding of the liberal arts disciplines. The *Vision 2020* report acknowledges that Texas A&M “has historically placed less emphasis on the letters and arts” (p. 34) and affirms the importance of learning in the liberal and fine arts. The report of the Strategic Policies Research Group points to deficiencies among TAMU graduates that bear on their academic experiences (or lack of them) in the liberal arts. Our recommendations are to maintain the present number of required hours in the humanities, arts, and social and behavioral sciences but to add to the opportunities for student choice.

Recommendations for the Humanities, Visual and Performing Arts, and Social and Behavioral Sciences Cores

1. Nine hours of course work in the humanities, visual and performing arts, and social and behavioral sciences will be required in the Core Curriculum (in addition to the twelve-hour citizenship requirement), distributed as follows:
 - 3 hours (Humanities)
 - 3 hours (Visual and Performing Arts)
 - 3 hours (Social and Behavioral Sciences)
 - 9 hours
2. Guidelines for the inclusion of courses in the Humanities and Visual and Performing Arts Cores: Courses approved as part of the Humanities and Visual and Performing Arts Cores should “expand students’ knowledge of the human condition and human cultures, especially in relation to behaviors, ideas, and values expressed in works of human imagination and thought. Through study in disciplines such as literature, philosophy, and the visual and performing arts, students will engage in critical analysis, form aesthetic judgments, and develop an appreciation of the arts and humanities as fundamental to the health and survival of any society” (THECB Advisory Committee Report, p. 7).
3. Guidelines for the inclusion of courses in the Social and Behavioral Sciences Core:
Courses approved as part of the Social and Behavioral Sciences Core should “increase students’ knowledge of how social and behavioral scientists discover, describe, and explain the behaviors and interactions among individuals, groups, institutions, events and ideas,” enabling students better “to understand themselves and the roles they play in addressing the issues facing humanity” (THECB Advisory Committee Report, p. 8).

Kinesiology

Physical activity or training has constituted a component of higher education in the Western tradition since the Greeks viewed the function of education as training the mind, body, and spirit. In the particular context of the United States, public college or university education has included the former two (i.e., mind and body) until the period following the Second World War. Recently, however, major universities have progressively reduced their requirements for physical education until at the present time very few still maintain physical activity classes in their core curricula. The removal of a physical education requirement over the last 20-30 years is somewhat paradoxical, because it is during this time that medical science has come to understand the health benefits of exercise. Because of this mounting medical evidence, health advocates, including the Surgeon General and the directors of the Centers for Disease Control, the American Heart Association, and the American College of Sports Medicine, among others, have specifically recommended regular physical education in the public schools and colleges and universities. Aside from the proven health benefits of exercise, there is mounting evidence that exercise has a positive effect on cognitive function (e.g., Kramer et al., *Nature* 400 (1999): 418).

During the course of committee discussions with various representatives of the University community, reference has been made to the existence of the new Recreational Sports Center and Natatorium, and the notion that this diminishes the need for a physical activity requirement. However, data provided by Dennis Corrington, Director of the Department of Recreational Sports, indicate that the availability of this marvelous facility does not guarantee a physically active student body. For the Spring 1999 semester, 75% of the students used the facility at least once, 50% used it 16 times or more (i.e., once per week or more), and 6% used it at least three times per week, which is considered the minimum number of exercise occasions per week for optimal health. Of course, students undoubtedly are exercising in settings other than the Rec Sports Center, but these data suggest that a significant number of our students do not regularly engage in physical activity.

The CCRC is persuaded that the quality of instruction in KINE courses is not an issue. Currently there are 400+ sections of KINE 199 offered each semester in approximately 60 different activities covering a wide range of individual and team sports and fitness and recreational activities. Enrollments average 33 students per section with a maximum of 45. Seventy per cent of the sections are taught by full-time faculty (senior lecturers and lecturers), and the average tenure of these faculty members at TAMU is ten years. The other 30% of the sections are taught by graduate assistants, each of whom is assigned a faculty mentor on an on-going basis. Student evaluations of KINE courses are routinely positive.

The major issue remains. Should four hours of Kinesiology (KINE) remain a Core requirement? From the discussions we have had with various groups and individuals, responses generally divide between faculty/administrators and students. Faculty/administrators seem generally to prefer that at least the 3 hours of physical activity be removed from the Core. There are several reasons for this, among them, the concern about giving academic credit for non-academic courses and the belief that the Core can most readily be reduced by a reduction in KINE hours. Students seem more supportive of KINE, although some believe that their physical

activity needs could be met in other ways at lower cost. Two-thirds of 1994 graduates responding to our survey agreed or strongly agreed that a kinesiology requirement should be retained.

The goal of the Core Curriculum is to ensure that every student at this University receives instruction in a broad array of essential disciplines. These disciplines are selected based on their relevance and importance to an educated graduate. It is, however, not possible to include within the Core every subject that we believe to be important. It goes without saying that we desire our graduates to adopt a healthy, active lifestyle. Nevertheless, it is the Committee's view that requiring three hours of physical activity courses within the Core Curriculum is not the best way to achieve this goal. Given the constraints in course hours and the need for a careful assessment of priorities, it is the Committee's opinion that physical activity courses have no place within a Core Curriculum. We do, however, believe that students must be instructed in the importance of a healthy, active lifestyle through a Health and Fitness course.

This recommendation should in no way be construed as a criticism of this program or its faculty. Nor should it be interpreted as a reluctance of this University to encourage a healthy lifestyle among our students and graduates. The Department of Health and Kinesiology should be encouraged to pursue the goals of inculcating a healthy lifestyle in our students through mechanisms outside the Core Curriculum.

Recommendations for Kinesiology

1. A single, one-hour Health and Fitness course, but no KINE activity courses, will be required in the Core Curriculum.
2. The University should be encouraged to support the Health and Kinesiology and Recreational Sports Departments in promoting activity programs for students.
3. Guidelines for inclusion of a course in Health and Fitness: Courses appropriate as Health and Fitness Core courses should contain at least two-thirds academic work and may contain up to one-third activity. Students should be introduced to "fundamental knowledge" of health issues "to meet present and future wellness objectives" (1999-2000 TAMU Undergraduate Catalog, p. 548).

Computer Usage

The 1989-90 Undergraduate Catalog states the following as the first item under the section heading *University Core Curriculum*--"Because the computer is a necessary and useful tool in learning: Students entering the University will have completed at least one course in computer science or will demonstrate proficiency through an examination. Otherwise, they will be required to complete a computer usage course for university credit." The following year's catalog repeated the same statement with an additional sentence indicating a list of approved

college computer usage courses. The computer usage statement for the Core Curriculum then stayed essentially the same through the 1998-99 catalog.

The 1999-2000 catalog dropped computer usage from the Core Curriculum, though it notes that "3 semester hours of computer science is required for many degree programs" (p. 19). At the recommendation of the CCRC, the Faculty Senate passed a resolution at the October 1999 meeting to reinstate the computer usage requirement as a graduation requirement separate from the Core requirement. The approved addition for next year's catalog is as follows: "Two years of the same foreign language and one year of computer skills credit from high school, or one year of foreign language, or credit by examination, and a one-semester computer skills course are required to graduate from Texas A&M University."

The ubiquitous nature of computers requires, as a minimum, some rudimentary computer usage skills for all college students. The minimum set of skills that are expected of all students includes the use of the computer for word processing, spreadsheet development, and internet access including e-mail. However, it is expected that this minimum set of computer usage skills will be obtained through high school courses; therefore, it would be inappropriate to set a university-level Core requirement to satisfy what is essentially high school level material. The university-level courses that cover computer usage skills usually assume that students already know the rudimentary skills mentioned above, and if students registering for such courses do not have those basic skills, they would need to learn those skills on their own or during a brief review portion of the course. Thus, the University does not have courses that cover only the rudimentary computer usage skills, which again implies that satisfying the computer usage requirement through a University Core course is not appropriate.

Pierce Cantrell (Associate Provost for Information Technology) testified before the Committee that not all high school courses in the computer skills area cover material that is at a sufficient level for a computer usage graduation requirement. Related to this is the question of whether or not a high school course is sufficient to produce a well educated college graduate in this technological age. On the other hand, many colleges require computer usage as a necessary part of their disciplinary curricula, and thus a separate Core requirement seems unnecessary.

Recommendations for Computer Usage

1. The following sentence should be added to the statement approved by the Faculty Senate regarding computer skills. "College-level computer courses that may be taken for credit and are acceptable for students making up a deficiency in high school computer skills are as follows: AGECE 221, AGEN 109, AGLS 201, ANSC 401, INFO 207, CPSC 110, 203, 206, 207, EDTC 345, ENDS 270, ENGR 111, HLTH 240, 430, KINE 240, 430, PHYS 401, RENR 201."
2. Guidelines for the inclusion of a course to satisfy a deficiency in high school computer usage: Since university level computer usage courses should cover more than the rudimentary computer usage skills expected to be learned in high school, the evaluation of courses that can be used to satisfy a deficiency in high school

computer usage can be made not only on the basis of the course content but also on the prerequisites. Any course for which the students will be expected to learn or to use word processing, spreadsheets, and e-mail is appropriate for inclusion in the list.

International and Cultural Diversity

The recently completed *Vision 2020* report presents twelve imperatives intended to guide the University towards a culture of excellence. Number six on the list states that "the ability to survive, much less succeed, is increasingly linked to the development of a more pluralistic, diverse and globally aware populace." *Vision 2020* goes on to suggest that Texas A&M graduates must augment their academic credentials with an understanding of cultures outside their personal experience. These sentiments echo conclusions that were drawn in the 1999 survey of industry leaders (Strategic Policies Research Group) of change in employment demands and requirements for college graduates. During the course of this study, one of three major themes that emerged from group discussions with industry leaders focused on the need for "universities to globalize their students by making them multilingual, multi-cultural, internationally knowledgeable, and mobile" (p. 31).

In 1993 the Faculty Senate considered and approved a U.S. Cultures and International requirement within the existing Core Curriculum. These requirements did not increase total hours in the Core but mandated that students take one course in each proposed new category (U.S. Cultures and International). The Student Senate also endorsed the concepts of cultural diversity and internationalism but favored a modified Core requirement. Despite a subsequent 1995 ad hoc committee evaluation and affirmation of the Faculty Senate proposal, no final action was taken by the University. (See Appendix E for a copy of the 1993 Faculty Senate resolution and for a preliminary list of courses originally drawn up in 1994.)

To achieve the excellence to which the University aspires, as indicated in *Vision 2020*, we must address the issue of international understanding and cultural diversity and devise methods to broaden the experiences of Texas A&M graduates. It is clear that Texas A&M students often lack knowledge and understanding of other cultures and, far worse, do not perceive their limitation as a deficiency.

The value of internationalization and cultural diversity has been acknowledged by University leadership, the faculty, employers, students, and the global community. A key concern, however, is to what extent a mandated Core Curriculum requirement will actually broaden the perspective of Texas A&M students. Will this solution be perceived as political in nature and therefore exacerbate rather than solve the problem? Despite the pitfalls inherent in any solution, inaction on this issue is no longer an option if Texas A&M University is to meet the demands of the changing global marketplace. Consequently, the Committee has devised several alternatives for addressing this need in ways that preserve choice, increase options, and avoid adding Core hours.

Recommendations for an International and Cultural Diversity Requirement

1. Establish a University-wide Core requirement of two courses (6 hours) to be taken from two new categories: (1) International and (2) Cultural Diversity. These two courses may be taken within existing Core requirements and do not add hours to the Core. While it is highly recommended that students take one course in each category, they will have the option of taking all 6 hours in either category alone. A course satisfying another Core category, satisfying a college/department requirement, or used as a free elective can also be used to satisfy these requirements. Courses in foreign language may be counted toward this requirement with the exception of 100-level courses or their equivalent. A substantial list of acceptable courses must be approved by the Core Curriculum Council prior to the implementation of this requirement.
2. Encourage all Texas A&M students to participate in an international study or work experience. Ideally, this would include immersion in a foreign language. Students who complete and document an approved one-semester international work or study abroad program will have fulfilled the Core Curriculum requirements for International and Cultural Diversity.
3. Develop a recognition program whereby students can graduate with "International Distinction" after completing a series of courses and experiences. At a minimum, these should include (1) demonstrated fluency in a second language, (2) completion of an approved work or study abroad program, and (3) completion of courses that satisfy the Core requirement for International and Cultural Diversity (6 hours).

Foreign Languages

The arguments set out in the discussion of International and Cultural Diversity above pertain as well to the importance of having students acquire some level of proficiency in another language. This goal has long been recognized at TAMU and is even more important now, in view of the "more pluralistic, diverse and globally aware populace" *Vision 2020* identifies. At the same time, foreign language acquisition has not been a part of Core Curriculum requirements at TAMU but has, rather, been treated as a graduation requirement that can be fulfilled through appropriate and sufficient high school course work.

The CCRC believes that some reasonable knowledge of a foreign language is essential for all of our graduates. The doors that proficiency in a second language opens are real and significant. Anyone who engages in the study of a foreign language is going to acquire, *en passant*, some considerable insight into cultural differences and how profoundly they affect our perceptions of other societies.

In keeping with the approach TAMU has adopted in the past, and in light of the increased importance of second language acquisition and cultural understanding, we make these recommendations.

Recommendations for a Foreign Languages Requirement

1. Three years of the same foreign language from high school, or one year of college-level foreign language, are required to graduate from Texas A&M University.
2. Because this requirement may be satisfied by high school course work, college hours taken to satisfy the requirement do not count toward the Core Curriculum.
3. If a student has fewer than three years from high school, the student must take a placement examination to determine the college equivalency of the high school work.
4. In order to give high school students time to plan for this graduation requirement, it will be implemented two years after the recommendation is approved.

The Number of Hours in the Core Curriculum

In our review of core curricula and general education requirements at other institutions, we found that stated objectives were quite similar but that approaches for fulfilling those objectives ranged widely among institutions. The avowed missions of the cores at each of these other universities are not unlike the goals of the Texas A&M Core: to graduate individuals who are broadly educated, who can communicate clearly and effectively, and who have an appreciation of their cultural heritage and their social and moral responsibilities. But there is no common, uniform pattern of university core requirements. Some universities have collegewide core requirements but no universitywide core. Universities without a universitywide core include the University of Michigan, the University of California at Los Angeles, and the University of California at San Diego. Universities with university-wide requirements include the University of California at Berkeley, Pennsylvania State University, and The Ohio State University, along with the University of Wisconsin, which appears to require between 25 and 30 hours as its core. The University of North Carolina has a comparatively substantial, universitywide core of 42 hours in addition to having a language requirement. Thus, from our investigation, the size of the present TAMU Core—48 hours—is greater than cores we reviewed at most other institutions.

Among the reasons for the present and larger TAMU Core are the legislatively-mandated requirements of twelve hours in American history and political science and the long-standing four-hour kinesiology requirement, both of which we discuss above. As a committee charged to review the TAMU Core Curriculum and to make recommendations appropriate for our students, we have been mindful of the studies and reports we have reviewed and the testimony we have heard from many individuals. We also believe that the realities of a statewide core and the

pressures on University undergraduate curricula from a variety of sources point to a TAMU Core Curriculum of not fewer than 42 hours and not more than 48 hours.

Recommendation for the Number of Hours in the Core Curriculum

We recommend that the Core Curriculum of Texas A&M University be 43 hours, distributed as follows:

Mathematics and Logical Reasoning	6 hours
Communication	6 hours
Natural Sciences	8 hours
Humanities	3 hours
Social and Behavioral Sciences	3 hours
Visual and Performing Arts	3 hours
Health and Fitness	2 hours
Citizenship (State-mandated American history and political science)	<u>12 hours</u>
	43 hours

Cross-Disciplinary Courses

The existing Core Curriculum at Texas A&M University recognizes the need for students to have a breadth of educational exposure that goes beyond the chosen major in fields ranging from Liberal Arts to Engineering and from Business to Science. For historic reasons, students choose from a list of courses that exist in virtual isolation from one another. Though there is a recognized need for students to understand the connections between various disciplines, the existing Core offers little in the way of "connective tissue." At a time when college graduates are often criticized for their lack of sophistication, and when the economy in all its aspects is both increasingly global and increasingly sensitive to social pressures, this strategy is perhaps less than optimum. There is a clear need for college graduates to have a grasp of "how it all fits together." One way to meet that need is to add widely cross disciplinary courses to the Core menu. One example of such a course is GEOS 410, which addresses "the interaction of the earth, atmosphere, oceans and life, including the impact of human society on the environment and climate; global change modeling; politics, policy and decision making."

Several issues commonly arise in discussions of cross-disciplinary Core courses. Among them are problems related to the allocation of student credit hours, development of course materials, and how these courses might be used within the Core.

The allocation of student credit hours is a primary obstacle. Because of the significance of SCHs and the way they are credited to academic units within the University, both colleges and departments commonly, and with some justification, resist any intrusion into their academic "turf." Similarly, the mere introduction of crossdisciplinary courses may be regarded by some departments as a threat to their resource base. GEOS 410 is offered by the College of Geosciences, yet it touches on political science, economics, and other subjects within the

purview of other departments. This model has the advantage that accounting for SCHs is tidy, but it suffers from the disadvantage that it is limited to one instructor who has expertise in one area of specialization. One way to build on this model is to encourage other departments to offer courses covering the same subject matter, but with a different emphasis (e.g., a course on Global Change with the emphasis on its economic implications). Another model would involve a teamteaching approach with significant participation by faculty from different departments and colleges. While team teaching requires a considerable allocation of faculty resources, truly crossdisciplinary courses offer the prospect of new excitement in the classroom, and are worth pursuing in spite of the administrative obstacles.

Another major impediment to offering truly crossdisciplinary courses is the absence of textbooks and other materials. Most textbooks are designed for courses within a rather narrow subject area. A broadly crossdisciplinary approach necessarily represents a new and largely unexplored teaching paradigm, and therefore imposes an enormous workload on the instructor(s). That load is itself an impediment to the development of novel approaches to the problem of offering courses with a broad perspective.

A third question is how Core credit should be given for crossdisciplinary courses. In a GEOS 410 model, the solution is straightforward. Where the focus is science, political science, or economics, for example, Core credit should be given in the area of emphasis. How a course with a wider focus fits into the Core model is less clear. One interesting possibility is to give credit in the area outside the student's area of specialization. According to this model a student majoring in history, for example, would earn Core credit in science for a course that explores the historical evidence for and/or impact of Global Change.

In sum, crossdisciplinary Core courses offer the exciting possibility of connecting each student's field of study to a wider world, thereby giving graduates a broader perspective. We offer several recommendations.

Recommendations for Cross-Disciplinary Courses

1. Crossdisciplinary courses should not be required, nor should they replace existing Core courses, but the University should develop models for adding such courses to the Core inventory.
2. The University should seek to develop administrative strategies to encourage the development of broadly crossdisciplinary courses for inclusion in the Core.
3. The University should seek ways to provide resources and incentives for the development of cross-disciplinary courses. Possible models for supporting the development of crossdisciplinary courses are Honors and International Curriculum course development grants.

New Courses Designed for the Core Curriculum

The present Core at Texas A&M University was constituted virtually entirely from existing courses. Too often, however, our Core courses are introductory courses to a particular discipline, not courses designed for a broad student population. They provide students with the necessary "facts," "equations," and vocabulary to advance in their disciplines, but do not contain the content and focus we would prefer for students outside the discipline. Many science courses, for example, do not discuss the scientific method, nor clearly elucidate how the scientific process differs from other modes of thought. The overall problem was discussed in a recent editorial in *Chemical & Engineering News* (January 10, 2000, p. 3) by Representative Rush Holt (New Jersey), who has a Ph.D. in physics and was assistant director of Princeton University's Plasma Physics Laboratory before his election to the Congress. He began his editorial as follows, "As a member of Congress and a scientist, one of my goals is to help address the public misunderstanding of the scientific process. A misunderstanding of the scientific method by politicians can lead to problems . . ." Surely, our representatives are not the only university-educated population that lack understanding of the scientific method and what distinguishes it from other disciplines. Our students, too, lack this understanding.

In a time that relies more and more on science and technology, it is incumbent upon Texas A&M University to develop a Core Curriculum that addresses this problem for our students. This will only be solved by developing new courses and thoroughly revising existing courses. One example of such a new course design is Chemistry 106 and its associated laboratory (Chemistry 116), courses that stress the way science "works," not just information. It is interesting to note that many chemistry majors and other science majors have taken this course and commented they wish their "majors" courses included more material of this type.

Of course, science is not the only area that needs to be addressed; other disciplines may suffer from the same lack of communication between diverse areas and teaching of fundamental concepts. Liberal Arts has addressed this problem with a series of honors courses (LBAR 203, 204, 381) that explore methods and concepts common to the humanities and social sciences; Geosciences has developed GEOS 410 (Global Change) to integrate the scientific, political, and personal dimensions of environmental change; and ENGR 109 (Engineering Problem Solving and Computing) introduces students to the fundamental issues and problem-solving techniques in all engineering fields. These and other courses might serve as starting points to develop a better curriculum designed for the Core.

In order to design courses that better meet the objectives of the Core Curriculum, interested faculty members will have to dedicate themselves to revising old courses and developing new ones to specifically address Core objectives. New syllabi, new teaching methods, and in some cases, new textbooks may need to be devised. We are not advocating "watered down" courses tailored on existing ones, but the creation of substantive curricula designed specifically to meet Core objectives in innovative ways. Faculty who choose to develop these courses will assume a major responsibility for ensuring that we achieve the objectives of the Core Curriculum. Properly developed Core courses in varied disciplines could help eliminate

the basic misunderstandings alluded to in Representative Holt's editorial, and in areas other than science, as well.

Recommendations for New Courses Designed for the Core Curriculum

1. Departments across the University should carefully examine their courses listed as options within the Core Curriculum to decide whether to develop new courses to better satisfy Core objectives.
2. Departments recognizing the advantage of such course development outside their departments for the Core education of their students should communicate these needs with the department(s) in question.
3. The University should seek means to encourage such Departmental self evaluations to identify needed new Core courses.
4. The University should provide resources for encouraging and accomplishing the development of new Core courses, especially across diverse disciplines. Specifically, the University should provide resources for faculty release time and/or summer salaries for the development of new Core courses.

Course Development Incentives

Our discussion of Cross-Disciplinary Courses and New Courses Designed for the Core Curriculum makes clear our belief that it is crucial to provide support for the creation and redesign of courses that will more satisfactorily meet the needs of a Core Curriculum audience—i.e., all of our undergraduate students. Resources must be committed to this effort, and we recommend the following initiatives.

Recommendations for Course Development Incentives

1. The University should create a Core Curriculum Development Grant Program modeled after the existing Honors Curriculum Development Grants and the International Curriculum Development Grants. Proposals would be invited for the creation of cross-disciplinary courses, new courses, or significantly revised courses aimed at a Core audience.
2. For Core Curriculum course development projects that are substantial and that will have sustained impact, the University should provide resources for faculty release time and/or summer salaries.

Instructional Quality in the Core Curriculum

The Core Curriculum at TAMU currently consists of 48 semester credit hours, which constitutes more than 30% of the credit hours taken by most individual students during their undergraduate program. Although there is flexibility in which courses and/or sections are taken to satisfy the Core requirement, TAMU students are essentially a "captive audience" who must enroll in the courses independent of the perceived quality of the learning experience. Unfortunately, information available to this Committee about the instructional quality of courses in the Core Curriculum is primarily anecdotal. However, there are abundant anecdotes attesting to concerns about the instructional quality of these classes. For example, a common complaint refers to difficulty in understanding instructors who do not have adequate English skills.

It is particularly unfortunate that it is often the first courses a freshman student takes at TAMU that have large section enrollments and are taught by relatively inexperienced instructors. It is a common story that the enthusiasm new students bring with them to the University is quickly dampened when they are placed in these courses. In the ideal scenario, these early exposures to learning in Core courses would produce an excitement about the respective disciplines and promote a lifetime interest in the field even though it may not be the student's major. Unfortunately, the opposite is more often the outcome.

The existence of the Core Curriculum at TAMU derives from the belief that all college-educated students should be exposed to, gain knowledge in, and have an appreciation for, the spectrum of human endeavors. As stated in the 1999-2000 Undergraduate Catalog, "the core curriculum emphasizes competence in the process of learning, the capacity to engage in rigorous and analytical inquiry, and the ability to communicate clearly and effectively" (p. 15). Core curricula at major universities have directly evolved out of the liberal arts tradition, and are generally acknowledged as increasing in importance with the progressive specialization of the various academic disciplines.

Most would agree that achieving these aims for the Core Curriculum in any class constitutes a pedagogical challenge. It is simply easier to transmit a compendium of facts than to teach students how to think, how to analyze, and how to communicate effectively. It might be argued that to achieve the stated goals, these classes should be taught by master teachers. Nonetheless, once approved as a component of the Core, management of the course is the sole prerogative of the home department. There is no "outside" assessment of the quality of the course, or continuing evaluation of whether or not it is meeting the originally stated objectives or the general goals as expressed above for all Core Curriculum courses.

Although there may be exceptions to the pattern, departments generally give low priority to Core "service" courses. Departmental resources, on a per credit hour basis, are generally devoted to graduate courses, undergraduate majors courses, and Core service courses in that order. This disproportional allocation of resources occurs in addition to the skewed subvention favoring upper division undergraduate and graduate courses mandated by the Coordinating Board. Sections of courses in the Core Curriculum typically have large enrollments and are

often taught by non-tenure track faculty or graduate students. As one example, according to SIMS, in the Fall 1999 semester two lecture sections of one of the primary science Core courses had approximately 300 students per section and were taught by a graduate student (i.e., the same student was teaching both sections). Obviously, some graduate students and some non-tenure track faculty are excellent teachers, but the important point is that as a general rule departments are not providing resources for Core Curriculum classes in proportion to the associated credit hours. In other words, Core Curriculum service courses are viewed as "cash cows." It should be pointed out that this situation is not unique to Texas A&M; it is a common problem at large public universities.

The fiscal reality is that the Core Curriculum funds the remainder of the state-supported academic venture at TAMU (as at other major universities). Savings achieved by staffing large enrollment sections of service courses with non-tenure track faculty and graduate students are used to provide higher quality training for undergraduate majors and graduate students in the respective departments. Thus, there will be tremendous resistance to any alterations that would direct resources to Core Curriculum offerings. Nonetheless, it could be argued that efforts to enhance the education of our students through the Core Curriculum would be best served by focusing on the quality of the existing or state-mandated Core (i.e., 42 hours) rather than fine-tuning its composition *per se*.

Concerted effort would be required to acquire objective data to support or refute the following contentions. Because these data are not currently available, the following issues are for the most part hypothetical:

A. Core Curriculum service courses offered by departments do not receive the level of attention or fiscal support that majors or graduate courses receive. Because of their lower priority, they generally have larger section enrollments and are often taught by non-tenure track faculty and graduate students. Although other indicators of quality exist, these are two relatively objective reflections of the overall instructional quality of the Core Curriculum. Although instructional quality is the concern, the issue is dictated by distribution of fiscal resources within the University.

B. As a corollary to the concern about the instructional quality of the courses in the Core, the question should be addressed as to whether or not these courses are indeed inducing "competence in the process of learning, the capacity to engage in rigorous and analytical inquiry, and the ability to communicate clearly and effectively," or if the courses primarily consist of a transmission of facts considered germane to the respective discipline (communicated in some measure by relatively inexperienced instructors). Anecdotal evidence indicates the latter to most often be the case.

Recommendations for Instructional Quality in the Core Curriculum

1. For a course to be accepted into the Core Curriculum, it should be clearly demonstrated that it will meet specific disciplinary objectives and will, as appropriate, instill "competence in the process of learning," engage students in

“rigorous and analytical inquiry,” and develop the students’ “ability to communicate clearly and effectively.”

2. The University must develop a strategy that will result in significantly more Core courses taught in small sections. Most Core courses should be limited to 50 students, and, at any rate, no Core Curriculum course should have more students per lecture session than will allow effective accomplishment of 1 above. An ideal goal for an overall student-teacher ratio is, as stated in *Vision 2020*, 16-1 (p. 28). Within two years, the University should have in place a concrete plan for accomplishing these goals.
3. All instruction in Core courses should be by knowledgeable and effective instructors who communicate well. As much as possible all lecture sections should be taught by faculty members. Graduate students should only be used in laboratory, recitation, applications, or small class-size sections. Even in these settings, graduate students should satisfy the requirements as effective instructors. Where graduate students teach Core courses, departments must assure their competence and mentor their performance.
4. Overall objectives of the Core Curriculum, the quality of Core courses, and the instruction in such courses should be routinely assessed. The Core Curriculum Council will be established (see below) to identify and validate measures of Core Curriculum quality and to implement processes for continuous improvement of the Core Curriculum.

VI. CONTINUOUS ASSESSMENT OF THE CORE CURRICULUM

The Core Curriculum at Texas A&M University ideally prepares students for the challenges and rewards of life-long learning. The substantial impact of this part of the curriculum on a student's education mandates that the quality of the Core be carefully maintained. It is not sufficient to review the Core every decade or so and expect to sustain a coherent philosophy of learning. Rather, a group of faculty dedicated to the excellence of a core educational experience must be prepared to continually discuss, evaluate, and improve this experience. To that end, the Core Curriculum Review Committee recommends the establishment of a standing Core Curriculum Council (CCC).

The CCC will be established to identify and validate measures of Core Curriculum quality and to implement processes for continuous improvement of the core curriculum. In September of each year, the Faculty Senate Executive Committee, in consultation with each College's Senate caucus, will appoint College representatives to serve staggered three-year terms on the CCC. Representatives should have direct knowledge of the undergraduate curriculum offered by the College and have a demonstrable dedication to quality education. Because the CCC will require an ongoing commitment of significant time and effort for faculty members,

service on the CCC will be deemed equivalent to 3 credit hours of instruction per year. The CCC will report directly to the Executive Committee of the Faculty Senate.

CCC responsibilities will be organized into three categories: 1) implementation oversight, 2) outcomes assessment, and 3) promotion of excellence.

Implementation Oversight:

1. A subcommittee of the CCC will assume responsibilities previously assigned to the Core Curriculum Oversight Sub-committee (CCOS) which will be sunsetted. The CCC subcommittee will devise an application for new Core course approval and will be responsible for evaluating all new courses for inclusion in the Core.

Criteria for course inclusion will be derived from the revised Core Curriculum guidelines.

An evaluation template will be created that incorporates sufficient detail such that a predictable and objective evaluation may be afforded all courses. Examples of appropriate questions include:

- * How much attention to internal logic and derivations suffices to make a statistics course suitable for satisfying a mathematics component of the Core?
- * How much writing qualifies a course for a writing intensive or "W" designation?

Written critiques in a standardized format will be provided to departments with recommendations for changes that will improve the suitability of a given course for inclusion in the core. Recommendations for approval of new courses will be considered each semester by the full CCC and forwarded to the Senate for consideration. The CCC will not evaluate the quality of a course *per se*, but will determine the appropriateness of the course for inclusion in the Core. Departments will remain the primary judge of the quality and disciplinary rigor of a given offering.

2. A two-year schedule will be developed that will allow for CCC review of all existing (grandfathered) Core Curriculum courses to determine if these courses meet inclusion criteria for the revised core curriculum as described above.
3. Biennial reviews of Core Curriculum courses within each College will be conducted by the CCC. Evaluations will be scheduled such that 2 - 3 Colleges will be reviewed by the CCC per semester on a repeating 2-year cycle. Instructors of Core Curriculum courses will submit to their College CCC representative a short biennial report using a standardized format to be designed by the CCC. The format may include, but is not limited to, a rationale for inclusion of a course in the Core, a copy of a representative course syllabus, representative projects or assignments, some indication of section size, and other information relevant to the assessment of a course's appropriateness within the

Core. For courses designated "W," details and/or examples of student writing assignments and grading strategy will be required. Instructors may provide additional data if desired. Each College representative will review the information submitted from his or her College and prepare a summary report for the CCC.

4. The CCC will schedule a meeting/retreat each semester where course approvals and biennial reviews are discussed and recommendations formulated for changes or improvements in Core offerings. These meetings will also serve as a philosophical forum for discussion of Core improvement independent of specific course offerings.

Outcomes Assessment:

1. Every 4 years, the CCC will be responsible for requesting and reviewing a report on external indicators of educational successes similar to the 1999 Strategic Policies Research Group report. Measures of Core effectiveness may include, but are not limited to, perceived improvements in graduates' written and oral communications skills, heightened international awareness in a larger percentage of students, and increased foreign language proficiency.
2. At 8-10 year intervals, the CCC will arrange an external review of the quality and suitability of the Core Curriculum. An outside audit team will examine the Core and evaluate it by comparison to core curricula at comparable institutions and at institutions in tiers considered higher than Texas A&M.
3. Additional external measures of quality that should be evaluated annually by the CCC include, but are not limited to, performance of students on exit exams, percentage success on certification exams, and improvement in national ratings of the University with respect to undergraduate education.

Promotion of Excellence:

1. With support from the Office of the Provost, and in consultation with directors of existing university writing centers and external experts, the CCC will prepare a detailed plan for creation of a Writing Resource Center. This Center, easy access to which must be assured, will provide support and resources for faculty, particularly those who participate in writing-intensive ("W") courses, and for students. A final plan, including time-line for implementation and anticipated costs, should be developed by the CCC within one year of the charge.
2. The CCC will create and administer the Core Curriculum Development Grant Program to be modeled on existing Honors and International course development grant programs. Faculty may apply for funding to create new courses or enhance existing courses to meet

the goals of the Core Curriculum. Proposals for new courses that address the following areas will be strongly encouraged.

- * Courses specifically designed to meet the needs of non-majors in Core courses. These courses are expected to maintain disciplinary quality and rigor while incorporating elements that enhance the relevance of the subject to non-majors. Chemistry 106 serves as an example of a model course of this type.
- * Cross-disciplinary courses that instill “competence in the process of learning” and engage students in “rigorous and analytical inquiry across disciplines” (TAMU 1999-2000 Undergraduate Catalog, p. 15). Colleges are encouraged to develop writing-intensive Freshman Seminars that emphasize critical thinking and ways of knowing in the context of cross-disciplinary topic areas. Liberal Arts freshman seminars (LBAR 101) exemplify this type of course.
- * Capstone courses that integrate and pull together disciplinary concepts in a writing and speaking intensive format.

As part of the grant application process, faculty will propose specific assessments to be used in evaluating the quality and suitability of their Core Curriculum offerings over time. The CCC is encouraged to formulate strategies for overcoming administrative obstacles to implementation of innovative Core course offerings (e.g., development of mechanisms for allotting subvention funds and teaching credit in cross-disciplinary courses). The CCC is also encouraged to explore innovative incentives for faculty participation in the Core Curriculum Development Program including provision of summer salary, development leave, and teaching-release time.

3. College representatives of the CCC will be encouraged to communicate on a regular basis with faculty and student leaders to hear ideas for promoting excellence across the Core curriculum. Such input may be gathered through annual College-level open forums organized by College CCC representatives or by other means.
4. The CCC will meet with the Legislative Affairs Committee of the Faculty Senate no less than once per year to develop specific legislative objectives aimed at enhancing the quality of the Core. Core Curriculum objectives deemed by the University to be of high priority would be included in the University legislative agenda. The CCC will serve as a resource for external affairs staff who may wish to coordinate inter-university efforts related to a core curriculum agenda.