Part I
Introduction

A. Overview of Charge

In the Fall of 1999 the Committee on the Undergraduate Program formed a subcommittee and charged it with reviewing MIT’s policies concerning freshman Pass/No Record (P/NR) grading and advanced placement examinations. As stated in the charge to the committee (see Appendix I-A):

Ever since its institution, faculty have expressed concern about whether the P/NR system is fulfilling the goals laid out for it. Such concerns have become more frequently voiced in recent years. Even when embracing the overall goals of the system, many faculty have begun to wonder whether a large number of first-year students have begun to “game” the first year in educationally inappropriate ways. Problems of gaming the system may be exacerbated by MIT’s liberal AP credit policy, which was recently identified by the Educational Design Project subcommittee as creating “curriculum creep” throughout the four-year curriculum. Still other faculty are concerned that the P/NR system discourages a serious approach to the first year academic program, leading to first year students being lax in their studies, unprepared for more advanced work, and overly active in extracurricular activities.

With respect to the system of Pass/No Record grading, the committee was asked to respond to the following questions:

1. Are the purposes as outlined in 1972 still relevant and consistent with the goals of the MIT first year experience?

2. What are the statistical trends with respect to subject enrollments, grade distributions, average loads at the start and end of term, etc?

3. What are some alternative proposals for first year grading schemes that might be considered?

4. Should P/NR grading be limited to the Fall Term only? Are there categories of subjects that should be graded on a P/NR basis regardless of when a student takes them?

5. Should there be options available to instructors or departments to limit enrollments in subjects for students not taking subjects on grades?
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6. The load limit is currently 54 units in the fall term and 57 units in the spring term. The fall term load limit has had an effect on enrollments in Freshman Advising Seminars. Should there be an adjustment or special exceptions made to these limits?

7. What are the incidences and consequences of the “gaming strategies” used by students to maximize P/NR grading?

8. How does the awarding of advanced placement credit influence student choices in the first year?

With respect to MIT’s advanced placement policy, the subcommittee was asked to respond to the following questions:

1. What do we know about students who use advanced placement credit? How do they perform in subsequent subjects?

2. What are the graduation patterns of students who are awarded AP credit? Do they graduate earlier? Do they earn multiple degrees?

3. What are the statistical trends? Are different subject enrollment or grade distribution patterns emerging? Are these observed patterns related to AP credit?

4. Should MIT continue the policy of allowing advanced placement credit? If so, should the policy be uniform across departments and Schools?

5. Should MIT’s policy governing advanced placement credit include the granting of MIT subject credit, or should we consider other options (e.g., the awarding of subject placement with no actual MIT subject credit or units; eligibility for MIT advanced standing examinations, etc.)?

6. Should students who are enrolled in predominantly second year subjects (by virtue of the amount of AP credit they have been awarded) be assigned non-optional sophomore standing?

Membership of the committee consisted of a chair selected by the Committee on the Undergraduate Program (who had previously chaired the CUP), representatives from the Committee on Academic Performance and the Committee on Undergraduate Admissions and Financial Aid, faculty with long-standing experience in teaching freshmen and from departments who teach many freshmen, a representative from the Dean for Undergraduate Education who has had considerable experience in this area, and two undergraduate students nominated by the Undergraduate Association.
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B. Methodology

During IAP and the Spring Term of 2000, the Subcommittee conducted a thorough review of the background of both of these policy areas and their current implementation. The Subcommittee met weekly during IAP and biweekly during the Spring, for a total of twelve meetings that consumed 25 hours of meeting time. The Subcommittee reviewed past reports pertaining to MIT’s freshman grading system, a large number of reports and compilations concerning the academic experiences of undergraduates (grade distributions, unit loads, etc.), reports of other universities’ practices, and other material. The Subcommittee also consulted with faculty and staff who had special experience with and concern for the freshman year, including members of the Dean’s Office (past and present), freshman advisors, and departmental academic officers. Subcommittee members also met with the Student Committee on Educational Policy (SCEP) of the Undergraduate Association and with associate advisors. Appendix I-B lists the individuals and groups Subcommittee members met with. Appendix I-C contains a limited bibliography of the studies and data that the Subcommittee reviewed during its deliberations.

The original charge to the Subcommittee requested a preliminary report early in the Spring term and a final report later in the Spring. The significant amount of review and deliberation necessary made it impossible to meet these deadlines. A preliminary, oral report was made to the CUP on April 5, 2000. The Subcommittee met to settle on the content of its final report during Finals Week, with the bulk of the final report being drafted over the summer. The final draft of the report was approved at a meeting of Subcommittee on September 18, 2000.

C. Principles

The freshman year, considered as a whole, is the foundation on which MIT’s distinctive educational experience rests. The two policies under the Subcommittee’s review, especially the Pass/No Record grading system, are integral pieces of that first year. Therefore, it was necessary to place the Subcommittee’s work in the context of the overall goals of the first year. Because the Subcommittee was charged with reviewing a set of administrative practices, it was also necessary to specify the general types of practices that should be encouraged.

Four academic and two administrative principles guided the Subcommittee’s deliberations and final recommendations. The four academic principles were taken almost verbatim from a set of academic principles recently articulated by the Committee on the Undergraduate Program. These principles frame the larger context of the Subcommittee’s task and keep it focused on the core educational issues that are at stake.

1. The first year should impart a firm base of foundational knowledge on which later learning, at MIT and throughout life, will be based. Almost all of MIT’s major
programs are designed assuming that sophomores have mastered a set of academic subjects that constitute the Science Requirement. In the School of Engineering particularly, one of MIT's crowning achievements is the development of an educational philosophy of “engineering science.” The most important function that grading and advanced placement policies can serve is to encourage students to master this foundational material before moving on to their majors.

2. The first year at MIT should provide an effective transition for students, both from the secondary school setting to MIT and from the freshman year to the major departments. The grading system and advanced placement policy should allow students to acquire the general skills and habits necessary for long-term success at MIT and to adjust to community living and the responsibilities of adulthood.

3. The first year should encourage students to exercise their intellectual abilities to their fullest. MIT undergraduates are admitted because they are capable of the most demanding academic achievements. Even though MIT has high academic expectations of all admitted students, our students arrive with varying degrees of preparation for handling MIT’s academic challenges and varying interests in the different intellectual paths the Institute has to offer. The grading and advanced placement policies should encourage each first year student to engage with the curriculum at a level that is challenging and exciting to him or her.

4. Students in their first year at MIT should continue to develop social skills and acumen for MIT and beyond. The value of an MIT education extends well beyond the classroom. The residential experience at MIT provides opportunities for MIT undergraduates, who are preparing for leadership positions in society, to learn how to live with people of different backgrounds, lead a balanced life, and understand generally what is expected of responsible members of a community. The grading and advanced placement policies should encourage good habits in balancing between curricular and extracurricular commitments and positively encourage students to explore the benefits of MIT’s opportunities that exist outside the classroom.

5. There are no first- and second-class subjects at MIT. Another distinctive feature of the MIT undergraduate education is the expectation that each student will excel in all academic areas of the curriculum—engineering, science, humanities, arts, and the social sciences. Therefore, the grading system and advanced placement policies must not systematically encouraging attention to one set of subjects at the expense of others.

6. Educational policy must be easy to understand and administer. There is a tendency in large organizations for rules to grow more complex. This danger is especially acute at MIT because of our great concern for the individual circumstances of students. However, accommodating the special circumstances of students by writing complex rules ultimately undermines the Institute’s ability to deal fairly with students; compounds the frustration of students, faculty, and staff who must administer and abide by complex rules; adds unnecessary administrative costs and burdens; and ultimately encourages a
culture of gamesmanship. Therefore, in recommending any changes to the grading and advanced placement policies, we should strive to make those rules as simple and transparent as possible.

Finally, the Subcommittee felt it important to make explicit three broad assumptions that guided its work.

1. **The ultimate goal of the subcommittee is to enhance the total educational experience of MIT undergraduates.** The grading system and advanced placement policy must be seen as two tools, among many, that guide freshmen in making appropriate trade-offs among competing uses of their time, establish a trajectory for their future paths through MIT, allow them to gauge the adequacy of their academic efforts, and ultimately advance them to personal success at the Institute.

2. **MIT undergraduates work exceptionally hard.** Slacking is not a dominant characteristic of students experiencing their freshman year. The Subcommittee must make this statement up-front because of some statements heard from faculty colleagues—and from upperclass students—that suggest otherwise. The Subcommittee has encountered some evidence that a small number of freshmen actively “coast” through the first year and evidence that many students, on the margin, do not apply themselves as assiduously to their classes as they might. At the same time, the freshmen as a whole complete more subject units than upperclassmen, are much more active in extracurricular and sports activities than upperclassmen, and often do what they can to take upper division subjects without the benefit of prerequisites. Therefore, the correct concern is not over whether freshmen are working hard, but whether they are applying their vast energies appropriately and efficiently, and whether the vast majority of them are making the right set of decisions that will ensure their current and later educational success.

3. **Any changes to the grading system need to be seen in context of other changes, currently under review, to enhance the freshman year at MIT.** Throughout the Subcommittee’s review, it encountered many criticisms of the current first year experience, from faculty and administrators, but especially from students. In that context it is easy to lose focus on grading and advanced placement and to wander into policy areas such as the content of the Science Requirement, the teaching approaches of first year subjects, and the efficacy of the advising system.

   The Subcommittee has avoided the temptation of exploring these topics that are not part of its charge. It notes the several plans and experiments currently under way to address all the deficiencies suggested and asks that its efforts be viewed in the larger context of the renewal of MIT’s first year experience. The Subcommittee recommends some important changes in how MIT grades its freshmen and grants advanced placement credit, and stands by those recommendations regardless of how the rest of the first year experience fares. However, if these are the only major changes that occur
in the current round of experimentation and reform with the first year, MIT will have missed an important opportunity.
Appendix I-A
Charge to the Committee

Background

Since 1968, MIT freshmen have been graded under a Pass/No Record system (referred to at various times in the past as "Pass/Fail" and "Pass/No Credit"). In February, 1972, following a four-year trial period, the Committee on the Evaluation of Freshman Performance released its findings and recommendations and outlined the purposes of Freshman Pass/Fail grading:

- "to relieve the anxiety and sense of pressure felt by incoming MIT students during the year of their transition from secondary school to work in a university of high quality and high expectation;

- "to develop in each student a more mature motivation for his university education and a more active, expressive involvement in his studies; and to give him a sense of freedom to make a wider choice of subjects and a wider choice in the allocation of his time among his subjects when a topic within any one of them especially excited him. These attitudes, it was felt, might persist throughout the upperclass years.

- "to give incoming students a year in which to compensate for differences in their secondary school preparation;

- "to improve the instructor-student relationship by removing the corrupting doubt that a student approaching an instructor might be attempting to influence his grade;

- "to enrich the evaluation of student performance and experience in each subject;

- "to change the image of MIT as a school that grinds out students mechanically, a school that only 'tools' would find congenial;

- "and, lastly, to lessen the (fairly small) loss of creative students during their freshman year."

The committee acknowledged that the absence of letter grades during the pilot phase might have produced undesirable results, including students' "neglect of their studies, being content only to 'get by;' that their preparation for upperclass subjects might thereby suffer; that the absence of information about how well they were doing...might create anxiety for some students; and that the absence of letter grades...might cause some difficulty in the placement of students in graduate schools, professional schools, or jobs." On balance, however, the committee concluded that the experimental grading system was a "definite improvement" to the freshman year and recommended that it be continued indefinitely.
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In the years since the original experiment, faculty committee records chronicle regular discussions of issues related to freshman grading and attempts to address them. In 1982, there was concern about the effectiveness of the performance evaluation system and the virtual lack of feedback by the end of the spring term; formal “hidden grades” for the Spring Term were introduced. In 1988 - in an attempt to address the heavily-packed first year core program -- a faculty committee tried to eliminate universal P/NR grading in the second term. An alternative motion was substituted instead that changed the Pass level from a “D” to a “C” grade, and the credit limit was lowered. In 1995, the old Freshman Performance Evaluation Forms were eliminated, substituted with a simpler but less universal system, and “hidden grades” were formalized for the Fall Term.

Charge to the Subcommittee

Ever since its institution, faculty have expressed concern about whether the P/NR system is fulfilling the goals laid out for it. Such concerns have become more frequently voiced in recent years. Even when embracing the overall goals of the system, many faculty have begun to wonder whether a large number of first-year students have begun to "game" the first year in educationally inappropriate ways. Problems of gaming the system may be exacerbated by MIT's liberal AP credit policy, which was recently identified by the Educational Design Project subcommittee as creating “curriculum creep” throughout the four-year curriculum. Still other faculty are concerned that the P/NR system discourages a serious approach to the first year academic program, leading to first year students being lax in their studies, unprepared for more advanced work, and overly active in extracurricular activities.

MIT's system of freshman P/NR grading exists to further the overall goals of the first year experience; any review of that system should be carried out with those goals in mind. Those goals have recently been re-articulated by the CUP and are provided in an attachment to this charge.

With respect to Pass/No Record grading in the first year, the subcommittee should address the following questions:

• Are the purposes as outlined in 1972 still relevant and consistent with the goals of the MIT first year experience?

• What are the statistical trends with respect to subject enrollments, grade distributions, average loads at the start and end of term, etc?

• What are some alternative proposals for first year grading schemes that might be considered?

• For example, should P/NR grading be limited to the Fall Term only? Are there categories of subjects that should be graded on a P/NR basis regardless of when a student takes them?
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• Should there be options available to instructors or departments to limit enrollments in subjects for students not taking subjects on grades?

• The load limit is currently 54 units in the fall term and 57 units in the spring term. The fall term load limit has had an effect on enrollments in Freshman Advising Seminars. Should there be an adjustment or special exceptions made to these limits?

• What are the incidences and consequences of the “gaming strategies” used by students to maximize P/NR grading: e.g., taking upper-level subjects prematurely and/or without the proper prerequisites; overloading to the detriment of mastery of material; declining sophomore standing when eligible and ready, etc. How does the awarding of advanced placement credit influence student choices in the first year?

With respect to MIT credit earned for work done prior to matriculation (“AP Credit”), the subcommittee should address the following additional questions:

• What do we know about students who use advanced placement credit? How do they perform in subsequent subjects?

• What are the graduation patterns of students who are awarded AP credit? Do they graduate earlier? Do they earn multiple degrees?

• What are the statistical trends? Are different subject enrollment or grade distribution patterns emerging? Are these observed patterns related to AP credit?

• Should MIT continue the policy of allowing advanced placement credit? If so, should the policy be uniform across departments and Schools?

• Should MIT’s policy governing advanced placement credit include the granting of MIT subject credit, or should we consider other options (e.g., the awarding of subject placement with no actual MIT subject credit or units; eligibility for MIT advanced standing examinations, etc.)?

• Should students who are enrolled in predominantly second year subjects (by virtue of the amount of AP credit they have been awarded) be assigned non-optional sophomore standing?

The subcommittee should feel free to range beyond these topics to fully explore the issues. Early in the second term, you will be asked to provide an interim report; a final report to CUP will be expected in late Spring.

22 November 1999
Appendix I-B

Individuals and Groups the Subcommittee Met With

Individuals
Prof. Paul Gray
Dean Marilee Jones
Prof. Travis Merritt
Dean Leo Osgood
Prof. Arthur Steinberg
Dean Bonnie Walters

Faculty groupings
Academic Officers in Math, Physics, Chemistry, Materials Science and Engineering, and Biology
Committee on the Undergraduate Program
Freshman Advisors
Freshman Core Lecturers
HASS Overview Committee
Physics Education Committee

Student groups
Associate Advisors
Student Committee on Educational Policy of the Undergraduate Association
Appendix I-C
Limited Reference List

Background reading
1. A Brief History of First Year/Pass No Record Grading
2. Further Information for Freshmen Regarding Pass-Fail (August 1, 1968)
3. Report to the Faculty on the Four Year Trial of Freshman Pass/Fail Grading (February 11, 1972)
4. CEP Recommendations on the Freshman Year (September 22, 1982)
5. Report from the Committee on the First Year Program (May 16, 1988)
8. CUP Meeting Notes (April 3, 1996)
10. Survey of Advanced Placement Credit Policies at Other Schools (Fall Term 1999)

Additional data gathered for this task
11. Excerpts from Physics Department interview with students after they had taken 8.01
   (comments pertaining to the effects of the grading system on performance)
12. Percentage of enrolling freshman class in each academic index column and personal
    index column (data from 1959–1999)
13. Hours per week spent on MIT subjects, as reported in the Spring 1999 and Fall 1999
    Subject Evaluation Guide
14. Preliminary data from the 1999 “Looking Back at Freshman Year” Survey of Sophomores
15. Cumulative Grade Distributions in 6.001, by Freshman/~Freshman status
16. “The Undergraduate Program at Other Universities” (Prepared by Prof. Tom Greytak,
    September 1997)
17. “Advanced Placement and Degree Credit at Entrance for September 1999“ (Admissions
    Office Brochure)
18. “Profile of the Freshman Year” (10 December 1985)
23. “The Academic Careers of Freshmen Placed on Academic Warning during Their First
    Year” (March 2000)
24. Grade distribution data of various sorts