

## **A Proposal to Discontinue the Undergraduate Program in Engineering Science**

September 30, 2002; Revised October 10, 2002

The Department of Aerospace Engineering and Engineering Mechanics (AEEM), is proposing the elimination of the undergraduate program in Engineering Science. Engineering Science is a small undergraduate program that is administered by the AEEM department. The program is offered only as an undergraduate program. All but three of the courses required by the program are courses that are offered by the various departments of the college and university for primary audiences other than engineering science students – i.e. there are only three courses offered solely for the engineering science program. The program is intended to provide an opportunity for students to design a relatively flexible program of study that still meets the requirements for engineering accreditation. Because other engineering programs at ISU have become a bit more flexible in recent years, there is declining interest in the program on the part of students, employers, and faculty. The program has never been large, and in recent years has been stable at approximately 20 students. It is anticipated that in the future most of the students who would have chosen this program will continue to enroll in engineering at ISU in one of the other continuing undergraduate programs such as mechanical or aerospace engineering. The primary rationale for this proposal is low and declining interest in the program on the part of students, employers and faculty who have been associated with the program.

The AEEM department administration and faculty, College of Engineering Curriculum Committee, and Engineering Caucus of the Faculty Senate have all been consulted regarding the proposed discontinuation and all of these groups support the discontinuation. The College of Engineering administration, the College of Engineering Academic Council, and the College of Engineering Faculty have also been consulted and all support the proposed discontinuation. The College of Engineering Faculty voted formally to support the discontinuation proposal without dissent at a faculty meeting that was held on September 19, 2002, as did the College of Engineering Curriculum Committee at a meeting held on September 11, 2002 and the Engineering Caucus of the Faculty Senate at a meeting held on September 10, 2002.

The following numbered items pertaining to the proposed discontinuation are in the format described in the formal “Program Discontinuation Procedures” document dated December 1998.

- 1. Program Discontinuation Requested by:** Department of Aerospace Engineering and Engineering Mechanics
- 2. Program Name:** Engineering Science

3. **Administered by:** Department of Aerospace Engineering and Engineering Mechanics
  
4. **Rationale for Discontinuance:** This program discontinuance proposal is the direct result of low and declining interest in the program on the part of students, employers and faculty who have been associated with the program. The chronic low enrollment in the program, coupled with opportunities to meet similar educational objectives through other programs offered by the college and university, are also factors. In addition, faculty interest in the program is minimal, and external constituencies appear to recognize that reasonable alternative programs are available for students at ISU. The proposal is part of an initiative by the AEEM department to refocus departmental activities and resources on aerospace engineering programs at the undergraduate and graduate levels. Recent budget reductions have also been a secondary consideration in the proposal, as the College of Engineering works to identify and focus on its highest priorities, consistent with the needs and advice of its multiple internal and external constituencies. The proposal is also partially the result of a larger initiative to examine carefully and focus college of engineering programs to enhance efficiency and resource utilization. This is an accredited undergraduate program. Most, if not all, of the students' interests could be accommodated by studying in other undergraduate programs offered at ISU, such as mechanical engineering or aerospace engineering. Its elimination will allow the faculty members involved in the program to redirect their efforts to higher priority focus areas. The impacts on student educational opportunities and total college enrollment are expected to be minimal because the numbers of students involved are small and because of the reasonable alternatives available to them.
  
5. **Similar Programs at other Regent's Institutions:** There are no programs of this name at other Regent's institutions. Other engineering programs at ISU and/or SUI can accommodate students' interests in this program.
  
6. **Enrollment Data for Current and Previous four years**

**Engineering Operations/Applications Enrollment**

<b>Fall 1998</b>	<b>22</b>
<b>Fall 1999</b>	<b>21</b>
<b>Fall 2000</b>	<b>20</b>
<b>Fall 2001</b>	<b>20</b>
<b>Fall 2002</b>	<b>21</b>

7. **Information Required by the Board of Regents:**

- a. Status and plans of students who are currently enrolled in the program.** Students in the program were surveyed during the latter part of Spring semester 2002 regarding the impact of the proposed program discontinuance on their plans to complete the program at Iowa State. The majority of students surveyed responded and all indicated that they planned to stay and complete the program at ISU. Thirteen of the current students are classified as juniors or seniors. Because of the curriculum requirements primary reliance on courses offered for students in other curricula, there will be no problem accommodating graduation requirements for the current students during a phase out period that allows all current students to graduate. As far as we have been able to determine, the currently enrolled students plan to complete the program, and all are expected to do so by 2005 at the latest.
- b. Projected phase-out information.** As indicated above, only three special courses are offered for this program, and thus associated costs are expected to be minimal. As numbers of continuing students decline, it is anticipated that appropriate course substitutions will be utilized to enable the special Engineering Science courses to be phased out by 2004.
- c. Reallocation expected as a result of the proposed elimination.** The elimination of this program will allow an estimated \$100,000 to be permanently eliminated from the department budget following the phase-out period that will end in 2005. This estimate is based upon one faculty FTE and modest program support funding that has been dedicated to the program.
- d. Impact of discontinuance on other programs and the institution.** The expected impact on other programs and the institution as a whole is expected to be minimal. This program allowed a small number of students a slightly more flexible approach to an engineering degree. Both on- and off-campus constituencies now view that opportunity as being unimportant because of other alternatives available within the College of Engineering for such students. It is estimated (conservatively) that at least half of the 21 currently enrolled students would have come to ISU to study engineering even if this program had not been available. A potential loss of fewer than 10 future students will have negligible impact in a current undergraduate population of 4,963 engineering students.
- e. Impact on minorities and women.** Current enrollment in this program includes twelve female students and three students from ethnic minority groups (two of whom are female). Although these numbers represent a significant fraction of the program's total enrollment, they do not represent a significant portion of the 791 women or 422 ethnic minority students enrolled in the College of Engineering. Furthermore, it is expected that potential students for this program will select alternative

engineering programs if this proposal is approved. There has been no indication from current students that they chose to come to the College of Engineering primarily because of the availability of this program.

- f. Potential faculty and staff reassignments.** There are no faculty or staff with full-time responsibility for this program, although it is estimated that approximately one faculty FTE of effort is associated with the program. If the proposal to eliminate the program is approved, the “faculty line” associated with the program will be eliminated from the department via the nonreplacement of a retiring or resigning faculty member.
- g. Reallocation of facilities and equipment.** There are no facilities or pieces of equipment that are devoted entirely to this program, and because of the low enrollment, the impact of the proposed discontinuance on facilities and equipment will be negligible.