

May 19, 2003

Memorandum

To: CBE Faculty
From: Assessment Subcommittee (DJK, TWR, RES)
Re: Spring Assessment Result Review

The Assessment subcommittee of the Curriculum Committee met to review the program assessment tools available in early May. Our principle focus was on the 2002 EBI Survey, with these results compared with inputs from course evaluation feedback, co-op employer surveys, and the 2001 Alumni Survey. Also available for reference were recent reports from the Visiting Committee.

The EBI Survey of 2002 program graduates showed several topics that merit attention. These topics were identified either from low absolute scores (scale of 1-7, with 7 excellent), low scores relative to our peer group (Select 6 institutions – UT Austin, U of Illinois, U of Minnesota, Northwestern, Stanford, Carnegie Mellon University), or declining scores from previous years. Once topics were identified, further checking of complementary coverage by other assessment tools provided additional perspective on the extent of concern. The significant topics and degree of concern, and desired follow-up are described below. At minimum, all topics identified here will be revisited by future subcommittee discussions to determine if the concerns are transient or ongoing.

1) Physics courses received very low ratings. This phenomenon has been noticed across the college for several years in the EBI results, and the Academic Programs, Curriculum, and Regulations Committee (APCRC) has begun monitoring the freshman Physics courses and discussing issues with the Physics department. APCRC chair Bob Witt (EP) and Dan Klingenberg (ChE) have collected syllabi and attended spring semester lectures, and are continuing the discussions.

2) Ability to function on multidisciplinary teams was rated somewhat low by our graduates. They rated themselves at 5.17, placing us #4 in our Select 6 group and below the average of 5.30. In contrast, “satisfaction with ability of fellow students to work in teams” was substantially higher at 5.73 (#2 in Select 6, average of 5.54); this higher rating of their classmates may reflect more their self-confidence than their actual ability. Results from Co-op employer surveys remain strong, centered at “Meets Expectations” with more “Exceeds Expectations” scores than neutral scores. Course evaluation surveys indicate the broader student body rates team skills as satisfactory, with

no corresponding dip in scores. Since the EBI survey results are not supported by other measures, this item merits continued monitoring but is not a confirmed problem area. Input from interviewers and co-op supervisors consistently identifies teamwork as important, so additional opportunities and training in teamwork at several points in the curriculum are desirable to prevent this from growing into a weakness.

3) Communication via oral reports was an area of concern in the EBI survey. Written communication was rated highly, but students scored themselves less strongly in oral presentations. Co-op employer surveys and course evaluations did not show a corresponding decline. Again, industrial inputs emphasize the importance of oral communication. Oral presentations are used in several courses depending on instructor choice. An examination of opportunities for oral presentations in our courses would determine the minimum and typical number of presentations given by students.

4) “Understanding of the impact of engineering solutions in a societal/global context” was rated very low in the EBI survey. This was a sudden decrease from the above-average score of last year, but this drop was not reflected in the Co-op employer or course surveys. Solutions are suggested at several levels: instructors should continue and increase efforts to show practical relevance of engineering problems, and student discussions should be encouraged. In addition, it may help to be more explicit in our expectations that relevant applications abound for all core material.

Overall, it may also be useful for students to see the Program Objectives and Outcomes more often, so they may be more aware how the different parts of the curriculum address the long-term goals for the program and their education. These objectives and outcomes are posted on the department web site, and are included on the course evaluations each semester; mention in a more discussion-oriented context might be helpful.

In conclusion, the several areas showing score decreases in the EBI survey were not indicated as problem areas in our other assessment tools. These topics merit further monitoring to see if the assessment inputs broaden to multiple years or multiple measures indicating problems. In addition, the faculty should consider specific enhancements or changes in their courses that could strengthen these selected areas to be sure they do not develop into weaknesses.

Recommendations:

- * identify opportunities and implement more oral presentations in ChE courses
- * identify opportunities for more team projects in ChE courses
- * broaden Engineering Elective requirements to permit use of technical communications courses (EPD 397 and EPD 275) as program electives
- * increase student awareness of Program Objectives and Outcomes
- * support college initiative to improve Physics courses