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Memorandum

To: CBE Faculty
From: Assessment Subcommittee (DJK, TWR, RES)
Re: Fall 2005 Assessment Results Summary

Results from the latest assessment tools for the fall 2005 semester have been compiled and evaluated. The current analysis provides conclusions in several areas: overall trends, updates on areas of earlier concern, and new areas to monitor.

Assessment Tool Inputs

The new data available this fall is from the end-of-semester course evaluation input from students in all CBE courses and from co-op/intern supervisors. EBI exit surveys completed by students graduating in December will be included with those collected in May 2006 (for May and August 2006 graduates) and analyzed in the once-yearly comparisons conducted by EBI in June-July 2006. The Visiting Committee will be meeting this spring. Looking at the Assessment calendar, many more inputs (EBI survey, Visiting Committee, Summer Lab Oral Evaluations) will be available in fall for a more diverse review.

Course evaluation outcomes assessments provide general feedback on how students perceive their competence in the departmental program outcome areas. As usual, ratings are high in many courses (10 or more of the 16 rated) for the hard, technical skill areas:

- a – apply knowledge of math, science and engineering,
- e – identify, formulate and solve engineering problems,
- l – engineering topics,
- h – global and societal impact,
- i – lifelong learning

and also j – knowledge of contemporary issues’.

New this year is finding ‘f – professional, ethical responsibility’ and ‘j – knowledge of contemporary issues’ at or above target in 10 courses.

Expected low scores are for topics only covered in a few classes. These items are at target levels in the courses that do have the described focus, and are now achieving target scores in 8 or 9 courses instead of 6 as before.

- b – ability to design and conduct experiments, and to analyze and interpret data,
- c – design a system, component or process
- d – ability to function on multi-disciplinary teams.

Design skills were rated highly in CBE 450, as desired, along with 250, 426, 270, and 540.

The lowest general score (9 courses) is in:

g – communicate effectively.

Communication skills did receive high scores in the lab courses (CE 324, 450) as well as the courses with substantial projects (CBE 426 and 540), and this indicates that the coverage is at the expected level for semester courses.

Outcomes f, h, and j are now achieving target levels in 10 or more courses, and improving. Likely, they will continue to need extra attention.

Co-op and intern evaluations were very good for summer and fall 2005. For review, the rating forms collect comments as well as ratings of ‘exceeds expectations,’ ‘met expectations,’ ‘below expectations,’ or ‘not available’ (EE, ME, BE, or NA) for each ABET outcome a-k and for overall performance. In summer 2004, overall ratings indicated that 5 students exceeded expectations and 11 students met expectations. The ratings in the individual ABET a-k listings were mostly EE or ME, with a few NA scores. In fall 2005, the overall ratings were 7 ‘exceed’ and 5 ‘met’ for a similar positive result. In both groups, there were no ‘below expectations’ ratings, so this information does not focus attention on any specific area.

Follow-up on Areas of Previous Concern

Our students continue to be rated highly for technical expertise.

Four areas are currently being monitored: 1) physics courses, 2) multidisciplinary teams, 3) oral reports, and 4) “understanding the impact of engineering solutions in a societal/global context.” Current assessment tools provide no new inputs into the physics issue. This remains a college-wide problem, and will be a continuing concern for the APCRC working group.

The global/societal impact item (h) is at acceptable levels in this evaluation. We will continue to monitor it.

New Areas to Watch

No new weaknesses in outcomes assessment are apparent in these inputs. Our only concern is that several early courses continue to have very low achievement of target levels. We question whether there can be improvements in these courses in connecting with department program outcomes, or if it is unrealistic for them to contribute at this early stage. If the latter is true, then it may be more appropriate to remove them from the collection of activities being monitored.

Action Items

- consider increased opportunities for team project training and practice
- identify increased opportunities for oral presentation training and practice.