

Notes from the 2011 ABET Faculty Review Meeting

May 3, 2011

Faculty in attendance: Gannon, Larsen, Heys, Richards, Gerlach, Seymour, Carlson, Peyton, and Brown

Outcomes (Summative) Assessment

The following outcomes were assessed this year using the listed samples of student work.

1. CHBE 439 Project (BioE Outcomes A and E – knowledge of math, engineering and science; ability to formulate and solve engineering problems)
 - a. Outcome A: average score was 2.1 (acceptable)
 - b. Outcome E: average score was 2.0 (acceptable)
2. CHBE 424 Transport modeling project (ChE Outcomes A and E – knowledge of math, engineering and science; ability to formulate and solve engineering problems)
 - a. Outcome A: average score was 2.4 (acceptable)
 - b. Outcome E: average score was 2.4 (acceptable)
3. CHBE 412 Final design report (ChE and BioE Outcomes C and H – ability to design a system and global and societal context)
 - a. Outcome C: average score was 2.5 (acceptable)
 - b. Outcome H: average score was 2.7 (exceptional)
4. CHBE 323 HYSYS Project and CHBE 324 computational project (Outcome K – use modern engineering tools)
 - a. ChE Outcome K: average score was 2.3 for CHBE 323 projects (acceptable)
 - b. BioE Outcome K: average score was 2.3 for CHBE 324 projects (acceptable)
5. CHBE 438 Contemporary issues project (Outcomes I and J – life-long learning and knowledge of contemporary issues)
 - a. Outcome I: average score was 2.2 (acceptable)
 - b. Outcome J: average score was 2.1 (acceptable)

A few suggestions were made by faculty members during this assessment. Specifically, a suggest was made to revise the first question on the rubric for outcome K.

Course Evaluations

CHBE 213: No concerns were noted. There was some discussion on one of the secondary outcomes associated with this course, Outcome J (knowledge of contemporary issues), and the instructor (Samborsky) describe the contemporary issues content of the course include bridge failures, self-healing materials, and other issues associated with modern materials.

CHBE 226 (EBIO 216): No concerns were noted. Outcome G (communication) was addressed through a five page paper in the course, and outcome J (contemporary issues) were widely addressed in the course through discussions of algo biofuels, plant tours, etc.

CHBE 424: No concerns were noted. Outcome J is largely addressed during the last week of lectures on stability and global climate, and outcome K is covered through a number of modern computational tools including COMSOL. There was some discussion over whether or not outcome C (design a system or process) is sufficiently covered in this course, but the student projects made is clear that design of systems and devices in an important theme in the course.

EBIO 324: No concerns were noted. This course has now been taught twice at Montana State University and the content is now established. Outcome K is covered through a COMSOL based project.

CHBE 322: No major concerns were noted. This course had a new instructor during the past academic year, and the HYSYS design project was not included in the course. Since outcome C (design of a system or process) is a secondary outcome for this course, the outcomes may need to be revised in the future if the HYSYS design project is not reintroduced. The instructor indicated that she was planning to include a HYSYS design project during the next academic year.

Program Objective Review

The following program objective was approved by the faculty after receiving input from the undergraduate students and department advisory committee.

Our graduates:

- will be confident in their ability to apply chemical engineering fundamentals.
- will be proactive problem solvers.
- **will have the ability to pursue lifelong learning.**
- **will be effective communicators and team members.**
- will be highly ethical engineering professionals.
- **will embrace process safety.**

Changes from the previous program objective are shown in **bold**.