

Assessment Update 2008

Prepared: September 19, 2008

CHBE assessment activities during AY 2007-08 included the following:

- Inputs Assessment
 - Curriculum Review
 - Course Reviews: CHBE 100, CHBE 213, CHBE 215, CHBE 322, CHBE 411, CHBE 412, CHBE 442, CHBE 120, CHBE 438, CHBE 443, CHBE 451 – a change in approach pushed these reviews into Fall 2008.
- Outcomes Assessment
 - CHBE 411 Interim Design Report, Outcome g (ability to communicate effectively)
 - FE Exam Results
 - Survey Results: Alumni, Employer, Graduating Seniors
- Objectives Assessment (no scheduled assessment in 2007-08)
- Assessment Plan Review
 - Course/Outcomes Matrix
 - Response Thresholds (establishing thresholds in preparation for 2008-09 review)

Details of Assessment Activities

Inputs Assessment

- **Curriculum Review**

A significant review of the curriculum was prompted by the retirement of two faculty members within the department and MSU's change to a student credit hour funding model. The following were discussed:

- Lab plan
- Integrating HYSYS throughout the curriculum
- ENGR 310 (Multi-disciplinary design course)
- Potential New Directions
 - Contemporary Issues in Science course (energy/sustainability focus)
 - Focus Areas and new technical elective courses
 - BioE minor and Dual (ChE/BiOE) degree
 - Seamless MS degrees (ChE, BioE, EnvE)

The Department Advisory Committee recommended the Contemporary Issues in Science course as soon as possible.

- **Course Reviews**

There were a significant number of courses to be reviewed in 2007-08.

- CHBE 100
- CHBE 120
- CHBE 213
- CHBE 215
- CHBE 322
- CHBE 411, CHBE 412
- CHBE 442, CHBE 443
- CHBE 438
- CHBE 451

This prompted a discussion of less onerous alternatives to the course review process. Ultimately the faculty opted to have each instructor present their course to the faculty and receive immediate faculty feedback. Because of the timing of the decision (Spring retreat), this forced the 2007-08 course reviews into Fall 2008. Those reviews are currently underway.

Outcomes Assessment

- **CHBE 411 Interim Design Report, Outcome g (ability to communicate effectively)**

Interim Design Reports were collected and assessed by faculty and DAC members. The DAC concluded that the targeted outcome is being met, and that the assessment rubric was useful.

- **FE Exam Results**

FE Exam results were assessed by faculty and DAC members. Successful pass rates, well above the national average did not indicate that any changes are needed.

- **Survey Results: Alumni, Employer, Graduating Seniors**

Alumni, Employer, Graduating Seniors survey results were assessed by faculty and DAC members. No sources of concern were observed.

Objectives Assessment

There were no scheduled objective assessment activities in 2007-08. However the new Program Objectives were considered as part of the curriculum review discussion.

Assessment Plan Review

- **Course/Outcomes Matrix**

The matrix relating courses to program outcomes was considered, but due to the significant curriculum changes currently underway it was felt that Fall 2008 would be a better time to reexamine the Course/Outcomes Matrix. That review will occur this semester.

- **Response Thresholds**

Response thresholds are scheduled to be reviewed in 2008-09, but the Department Head's proposed thresholds were reviewed and modified to allow the thresholds to be in place for a time before the 2008-09 review.

Department Advisory Committee (DAC) Input

The complete DAC Report to Faculty is available on the Department's Assessment website. Only the Assessment Results are included here.

ABET Assessment Results

- The DAC found that the Department is meeting the outcomes based on the evidence in the CHBE 411 Design Reports, FE Exam results, and survey results (alumni, employer, and senior exit). The 411 Design reports were useful in assessing program outcomes. The assessment rubric was a good tool to perform the outcome assessments.
- The DAC recommends that the department send out the ABET assessment material in advance of next years council meeting. This would allow much of the assessment activity to be done in advance of the meeting.
- The DAC compliments the Chemical and Biological Engineering faculty and staff on delivering a high quality engineering program to MSU students. The assessment results show impressive evidence of the high technical skill level and preparedness of MSU Chemical Engineering graduates.

Curriculum and Other Changes in Response to Assessment

- ENGR 310 (3 cr) [Multi-Disciplinary Design] has been incorporated into the curriculum. This required eliminating CHBE 410 and moving much of that content in CHBE 411 and CHBE 412 which will both be 3 cr courses in the future. A three-credit CORE course was also eliminated.
 - This has the advantage of building multi-disciplinary design into the curriculum, but the success of the course will need to be assessed.

- CHBE DESIGN (CHBE 411, CHBE 412)
 - The ethics case students that had been a part of CHBE 410 will be incorporated in CHBE 411.
 - The decision on when to teach economics should be left to the new instructor, Dr. Peyton.