

2007 MASTER PLAN/PROGRESS REPORT

Academic Program: BS Engineering

Person Responsible: Dr. Jonathan F. Sullivan

Date Submitted: 19 June 2007

Mission: The Department of Engineering will provide an education in chemical, civil, electrical, and mechanical engineering that is professionally focused and practice-oriented within a student friendly environment. We will prepare our students to practice engineering, focusing on the industrial needs of the region. We will meet the needs of traditional and non-traditional students through close contact with the faculty, the staff, and industrial engineers and managers in our region. We will maintain an up-to-date curriculum that fosters inter-disciplinary teamwork, scholarly development, cooperation with regional industry, and engineering ethics.

Institutional Mission Reference: The Department Mission supports the University Mission by fostering student success, academic excellence, and university-community alliances. In the department mission, student success and academic excellence are promoted by a professionally focused and practice-oriented student friendly environment, maintaining an up-to-date curriculum. The university mission is also accomplished by the close cooperation with regional industry.

Assessment Methods Utilized:

- Standardized Exam (nationally normed)
- Standardized Exam (state-normed)
- Major Field Examination
- Internally-developed Examination
- Student Opinion Survey (SOS)
- National Survey of Student Engagement (NSSE)
- Employer Survey
- Graduate Survey
- Alumni Survey
- Exit Survey/Interview/Exam
- Program-specific Survey
- Scoring of Essay
- Portfolio Evaluation
- Capstone Project
- Presentation
- Research Paper
- Research Project
- Course Summary
- Excel Spreadsheet
- Access Database
- Other - Please describe: _____

Data Repository Location:

Engineering Departmental Office

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Student Learning Outcome 1: Graduates apply critical thinking in academic and professional environments.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
80% or better passing rate on the Fundamentals of Engineering Exam.	October 2006: 11 students passed the FE Exam out of 19 total students taking it, resulting in a pass rate of 58% April 2007: 6 students passed the FE Exam out of 11 total students taking it, resulting in a pass rate of 55%	Develop policies to require all engineering students to take the FE exam to provide a larger sample. Integrate FE review sessions with ENGR 490 and require all students to attend the review sessions.
Average score of 4.0 or better (5 point scale) on faculty evaluations of student capstone senior design projects related to critical thinking.	Average score of 4.4 was achieved on faculty evaluations of student capstone senior design projects for ABET criteria 3(a, b, c, e, k) which directly correspond to student critical thinking.	No action required at this time.
Average score of 4.0 or better (5 point scale) on employer's evaluation of co-op students related to critical thinking.	Average score of 4.2 was achieved on employer's evaluation of Co-Op students related to critical thinking.	No action required at this time.
Average score of 4.0 or better (5 point scale) on portions of graduating seniors' exit surveys related to critical thinking.	No data currently available.	Develop, distribute, and collect exit surveys for graduating seniors beginning with the Fall 2007 semester. Integrate completion of exit survey with ENGR 490/491 and require all students to complete and turn in an exit survey.
Average score of 80% or better on ABET course evaluations related to critical thinking.	No data currently available.	Select representative courses covering all four disciplines and representing all levels of Bloom's Taxonomy. Develop and implement policies to ensure timely completion and submission of ABET course evaluations.

Student Learning Outcome 2: Graduates formulate and express ideas effectively through oral, written, and/or technological communications in academic and professional environments.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
<p>Average score of 4.0 or better (5 point scale) on faculty evaluations of student capstone senior design projects related to oral, written, and/or technological communication.</p>	<p>Average score of 4.4 was achieved on faculty evaluations of student capstone senior design projects for ABET criterion 3g which directly corresponds to oral, written, and/or technological communication.</p>	<p>No action required at this time.</p>
<p>Average score of 4.0 or better (5 point scale) on employer's evaluation of co-op students related to oral, written, and/or technological communication.</p>	<p>Average score of 4.3 was achieved on employer's evaluation of Co-Op students related to oral, written, and/or technological communication.</p>	<p>No action required at this time.</p>
<p>80% of students will perform satisfactorily on writing requirements in writing enriched courses.</p>	<p>No data currently available.</p>	<p>Identify writing enriched courses covering all four disciplines. Develop rubrics for determining satisfactory writing performance for writing enriched courses.</p>
<p>80% or more students completing SPCH 201 (Fundamentals of Public Speaking) with a grade of 'C' or better.</p>	<p>Fall 2006: 6 out of 6 (100%) engineering students completed SPCH 201 with a grade of 'C' or better. Spring 2007: 13 out of 14 (93%) engineering students completed SPCH 201 with a grade of 'C' or better.</p>	<p>Follow MSU policy in requiring all engineering students to take SPCH 201 as part of their humanities requirement. Work with Department of Mass Communication to introduce elements of technical speaking for ENGR students.</p>

Student Learning Outcome 3: Graduates analyze the global community to make sound judgments in academic and professional environments.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
<p>Average score of 4.0 or better (5 point scale) on faculty evaluations of student capstone senior design projects related to global community analysis for sound academic and professional judgments.</p>	<p>Average score of 4.5 was achieved on faculty evaluations of student capstone senior design projects for ABET criteria 3(c, f, h, j) which directly correspond to global community analysis for sound academic and professional judgments.</p>	<p>No action required at this time.</p>
<p>Average score of 4.0 or better (5 point scale) on employer's evaluation of co-op students related to global community analysis for sound academic and professional judgments.</p>	<p>Average score of 4.0 was achieved on employer's evaluation of Co-Op students related to global community analysis for sound academic and professional judgments.</p>	<p>Although the minimum expected level was achieved, there is room for improvement. The faculty will explore opportunities to demonstrate and reinforce the importance of the global perspective (and engineering's place within it) throughout the engineering curricula beginning with the Fall 2007 semester.</p>
<p>80% or better attendance at required seminars given by external invited speakers from industry, research, and academia.</p>	<p>No data currently available.</p>	<p>Develop and implement engineering seminars given by external invited speakers from industry, research, and academia for use beginning with the Fall 2007 semester.</p>
<p>Average score of 4.0 or better (5 point scale) on portions of graduating seniors' exit surveys related to global community analysis for sound academic and professional judgments.</p>	<p>No data currently available.</p>	<p>Develop, distribute, and collect exit surveys for graduating seniors beginning with the Fall 2007 semester. Integrate completion of exit survey with ENGR 490/491 and require all students to complete and turn in an exit survey.</p>