

UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in 2007-08 Annual Reports

DEPARTMENT Mechanical Engineering **DATE** 4/19/09

COMMITTEE MEMBER(S) CONDUCTING REVIEW Fred Remer & Jon Jackson

1. STUDENT LEARNING GOALS

- | | | | |
|---------------------------------------|---------------|--------------|--------------------------|
| • Were any goals referenced? | YES <u>G</u> | NO <u> </u> | QUALIFIED Y/N <u>U</u> |
| • If so, were goals well articulated? | YES <u>G</u> | NO <u> </u> | QUALIFIED Y/N <u>U</u> |
| • Do goals address student learning? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u>U_G</u> |

Comments:

Undergraduate: The annual report lists Values and Priorities, but it does not list any specific goals. The assessment plan lists five Learning Goals and Objectives. Those goals are not addressed in the annual report. However, the goals do relate indirectly to student learning. Some of the goals are broad and may be difficult to measure.

Graduate: The annual report lists learning goals and objectives. Goals and objectives were listed for MS ME thesis and non-thesis options and the ME ME program. Both goals and objectives were well organized. Most of the objectives were very focused, but indirectly related to student learning.

In addition to the Departmental goals, please also consider UND's Institutional and Essential Studies goals for student learning (shown in alignment within parentheses). Use 'U' (undergraduate) or 'G' (graduate) to identify UND/Essential Studies goals which are similar to the referenced departmental goals.

- U_G 1 Communication – written or oral (“able to write and speak in various settings with a sense of purpose/audience”)
 U_G 2 Thinking and reasoning – critical thinking (or “be intellectually curious”; analyze, synthesize, evaluate)
 G 3 Thinking and reasoning – creative thinking (or “be intellectually creative”; explore, discover, engage)
 U 4 Thinking and reasoning – quantitative reasoning (“apply empirical data...analyze graphical information”)
 5 Information literacy (“be able to access and evaluate...for effective, efficient, and ethical use”)
 6 Diversity (“demonstrate understanding of diversity and use that understanding...”)
 7 Lifelong learning (“commit themselves to lifelong learning”)
 8 Service/citizenship (“share responsibility both for their communities and for the world”)

Comments regarding departmental goals and alignment of departmental goals with institutional and Essential Studies goals:

Undergraduate: The goals as listed in the assessment plan do address communication, critical thinking and quantitative reasoning.

Graduate: The learning goals and objectives either directly or indirectly related to a few ES goals. Student Learning Goal 1 (“... demonstrate a mastery of scientific research by formulate, assessing and documenting a scientific hypothesis.”) includes communication, critical thinking and creative thinking.

2. ASSESSMENT METHODS

Were any specific assessment methods referenced?	YES_U_G_	NO___	QUALIFIED Y/N ___
• If so, were specifically chosen assessment methods appropriately aligned with individual goals?	YES_G___	NO___	QUALIFIED Y/N ___U_
• Were both direct and indirect assessment methods used as components of a “multiple measures” approach?	YES_U___	NO___	QUALIFIED Y/N ___G_

Comments:

Undergraduate: The assessment plan lists both direct and indirect assessment methods. The **direct** methods include student portfolios and samples of student work. The direct measurements are sampled annually from eleven ‘primary’ mechanical engineering courses. Supporting courses are sampled at the discretion of the ME Assessment Committee. The Fundamentals of Engineering Exam also is used as a direct metric. **Indirect methods** include the senior exit survey and a senior exit interview with the department chair. Alumni are surveyed annually.

Graduate: The assessment plan includes assessment ‘forms’ which are used to assess individual students performance in meeting the Student Learning Goals. The form contains mostly indirect assessment methods, which are completed by the advisor, department chair and committee.

3. ASSESSMENT RESULTS

Were any assessment results reported?	YES___	NO_G_U___	QUALIFIED Y/N ___
• If so, were the results clear in terms of how they specifically affirm achievement of goals?	YES___	NO___	QUALIFIED Y/N ___
• If so, were the results clear in terms of how they indicate need for improvement?	YES___	NO___	QUALIFIED Y/N ___
• Were the results tied to goals for student learning?	YES___	NO___	QUALIFIED Y/N ___

Comments:

Undergraduate: No results were reported.

Graduate: No results were reported. One comment stated “See above” which may allude to results that were reported in other parts of the annual report.

In addition to departmental goals, some assessment results may be applicable to institutional and Essential Studies goals. Use ‘U’ (undergraduate) or ‘G’ (graduate) to identify those results which are applicable to institutional/Essential Studies goal achievement. For indicated items, please describe findings in the appropriate section below. .

- _____ 1 Communication – written or oral (“able to write and speak in various settings with a sense of purpose/audience”)
- _____ 2 Thinking and reasoning – critical thinking (or “be intellectually curious”; analyze, synthesize, evaluate)
- _____ 3 Thinking and reasoning – creative thinking (or “be intellectually creative”; explore, discover, engage)
- _____ 4 Thinking and reasoning – quantitative reasoning (“apply empirical data...analyze graphical information”)
- _____ 5 Information literacy (“be able to access and evaluate...for effective, efficient, and ethical use”)
- _____ 6 Diversity (“demonstrate understanding of diversity and use that understanding...”)
- _____ 7 Lifelong learning (“commit themselves to lifelong learning”)
- _____ 8 Service/citizenship (“share responsibility both for their communities and for the world”)

Comments regarding results and the application of results to departmental, institutional and Essential Studies goals:

Undergraduate: No results were reported.

Graduate: No results were reported.

4. CLOSING THE LOOP

Were any actions taken on the basis of assessment results reported?

YES _____ NO _____ QUALIFIED Y/N ___U___

- If so, do curricular or other improvements/ changes arising from assessment results directly address goals for student learning?

YES _____ NO ___G___ QUALIFIED Y/N _____

Comments:

Undergraduate: While the annual report does not list results from the annual assessment, it does list 'priorities' that read as action items. It is unclear if these 'priorities' are a product of assessment results. One of the 'priorities' is from several years ago ("a. During the academic year 2004-2005, undertake a curriculum review...").

Graduate: No 'actions' were reported.

SUMMARY

Strengths

- ___U___ A specific plan for assessment is in place.
- ___ Student learning goals are well-articulated.
- ___G___ Assessment methods are clearly described.
- ___ Assessment methods are appropriately selected.
- ___ Assessment methods are well-implemented.
- ___U___ Direct and indirect methods are implemented.
- ___ Results are reported.
- ___ Results are tied to closing the loop.
- (Decision-making is tied to evidence.)

Areas for Improvement

- ___ No specific plan for assessment is in place.
- ___ Student learning goals are not well-articulated.
- ___ Assessment methods are not clearly described.
- ___ Assessment methods are not appropriately selected.
- ___ Assessment methods are not well-implemented.
- ___G___ A single type of assessment methods predominates.
- ___U___ No results are reported.
- ___U___ Results are not clearly tied to closing the loop.
- (Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

The Mechanical Engineering undergraduate assessment plan does list learning goals and objectives. It does have a plan for collecting both direct and indirect data. The plan, in written form, is not well organized. It is uncertain how the plan is executed since no results are reported. It is evident that assessment is being performed based on the list of 'priorities' in the annual report.

The Mechanical Engineering graduate assessment plan lists Student Learning Goals and Objectives. Most of the objectives are focus and easy to measure (i.e., present research findings, publish a thesis, etc.). The goals could be better articulated to address student learning. The plan relies too heavily on indirect assessment methods. No results were given. No actions were reported as taken.

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Section 1: _____?_____ Section 2: _____?_____ Section 3: _____NA_____ Section 4: _____NA_____

Coding Key:

- Y = yes, this is done appropriately and well
- N = no, this is not done at all, or it is not done in relationship to student learning
- NA = no information available
- ? = action or progress is apparent; however, evidence is lacking that this is completely and appropriately done