

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

DEPARTMENT Engineering PhD **DATE** May 5, 2009

COMMITTEE MEMBER(S) CONDUCTING REVIEW Sharlette Seelan & Darla Adams

1. STUDENT LEARNING GOALS

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

Comments:

Undergraduate:

Graduate: This feedback is based on the Graduate Program Review submitted by the dept. (not the Annual Report. The dept also has a comprehensive assessment plan posted on the website). The Engineering PhD is designed to accommodate all the engineering disciplines – chemical, civil, electrical, energy, environmental, geological and mechanical. Hence the three goals referenced are quite broad (eg. Graduates will have a depth of knowledge in their chosen engineering emphasis area and a breadth of knowledge in related areas). The challenge when goals are articulated so broadly is that it can be difficult to figure out how to collect appropriate data. You might consider various options, e.g., having some goals which cut across all disciplines (e.g., “Students will be able to formulate and carry out a research plan appropriate for answering complex engineering questions.”) and others which vary according to the discipline (e.g., for students completing a degree program emphasizing environmental engineering, “Students will be able to analyze complex engineering problems in order to make recommendations and decisions appropriate to the situation.”) Generally, it’s preferable to describe what students will know or be able to do rather than describing the experience students will have (e.g., instead of “Students will formulate and execute a research and/or development plan involving the significant investigation of scientific hypothesis and/or engineering technologies,” write “Students will be able to formulate and carry out...”). The shift in language moves your focus from the experiences your program provides to the competencies students must demonstrate – and it’s really student competencies that are of interest with assessment.

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.

- G 1 Communication – written or oral (“able to write and speak in various settings with a sense of purpose/audience”)
- 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)
- G 4 Thinking and reasoning – quantitative reasoning (“apply empirical data...analyze graphical information”)
- G 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...”)
- G 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: NA

Graduate: Although the goals are very general, Goals 2 & 3 could be correlated to the Essential Studies goals.

2. ASSESSMENT METHODS

- | | | | |
|---|-----------------|----------------|---------------------------|
| Were any specific assessment methods referenced? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u>?_</u> |
| • If so, were specifically chosen assessment methods appropriately aligned with individual goals? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |

- Were both direct and indirect assessment methods used as components of a “multiple measures” approach? YES____ NO____ QUALIFIED Y/N ____

Comments:

Undergraduate:

Graduate: A combination of course work, research credits, poster/oral presentation at the Graduate Forum, and dissertations were the assessment methods referenced. The dept also conducts a survey of graduating students at the end of each semester. An alumni survey and an employer survey was also developed in 2006.

3. ASSESSMENT RESULTS

- Were any assessment results reported? YES__X__ NO____ 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:

Graduate: Results from the evaluation of dissertations from 2006 and 2007 were reported. (The data set is very small – three students). No results from the surveys were reported.

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. .

- __G____ 1 Communication – written or oral (“able to write and speak in various settings with a sense of purpose/audience”)
- __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)
- __G____ 4 Thinking and reasoning – quantitative reasoning (“apply empirical data...analyze graphical information”)
- __G____ 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:

Graduate:

4. CLOSING THE LOOP

- Were any actions taken on the basis of assessment results reported? YES__X____ NO____ QUALIFIED Y/N ____
- If so, do curricular or other improvements/changes arising from assessment results directly address goals for student learning? YES____ NO____ QUALIFIED Y/N ____

Comments:

Undergraduate:

Graduate: No changes were made and the dept plans to continue to collect and analyze data, which makes sense given the small amount of data that is so far available. As additional data are collected, you'll want to ensure that there are yearly discussions about data, complete with minutes or some other means of record-keeping that allow you to track findings, discussions, and decision-making for inclusion in future annual reports.

SUMMARY*Strengths**Areas for Improvement*

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

☐ ___ 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.
☐ ___ A single type of assessment methods predominates.
☐ ___ No results are reported.
☐ ___ Results are not clearly tied to closing the loop.
 (Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

A plan is in place and faculty are beginning to collect data. Given the nature of this program (cutting across multiple departments), you may find that it's a challenge to get all the data collected, reported, and used. Developing systems that are used regularly during culminating events can be especially helpful. For example, if you develop a rubric that incorporates all intended outcomes for the program, you could require that faculty who read comprehensive exams or theses (or who participate in dissertation defenses) use the rubric to score students' performances and submit the completed rubric/scoring guide immediately following the activity itself. By the end of the year, you might have data on only a small number of students but you would have scores from several different faculty – creating a means of finding out how satisfied those faculty are with the students' demonstration of knowledge and skills. A simple means of scoring would use only a small number of options, e.g., outstanding, creditable, acceptable, unacceptable, and NA (essentially "can't tell based on this performance"). If there are some skills on which scores are routinely higher or lower than others, you'd know that was worth further discussion.

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Section 1: ☒ Y ___ Section 2: ☐ ? (Assess Plan) ___ Section 3: ☐ ? ___ Section 4: ☐ ? ___

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