

UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in 2011 Annual Reports
GRADUATE PROGRAMS

DEPARTMENT Chemical Engineering – M.S. in Sustainable Energy Engineering **DATE** April 24, 2012

COMMITTEE MEMBER(S) CONDUCTING REVIEW Eric E. Johnson and Cassie Gerhardt

1. STUDENT LEARNING GOALS

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

Comments:

The Annual Report of the Chemical Engineering Department contains no information regarding learning goals for the Master of Science in Sustainable Energy Engineering. The annual reports of the School of Engineering & Mines and of the Civil Engineering Department were consulted as well, and no information regarding learning goals for the Master of Science in Sustainable Energy Engineering was found there either.

2. ASSESSMENT METHODS

- | | | | |
|--|--------|-------------|-------------------|
| Were any specific assessment methods referenced? | YES___ | NO <u>X</u> | QUALIFIED Y/N ___ |
| • If so, were specifically chosen assessment methods appropriately aligned with individual goals? | YES___ | NO___ | QUALIFIED Y/N ___ |
| • Were both direct and indirect assessment methods used as components of a “multiple measures” approach? | YES___ | NO___ | QUALIFIED Y/N ___ |

Comments:

The Annual Report of the Chemical Engineering Department contains no assessment information for the Master of Science in Sustainable Energy Engineering. The annual reports of the School of Engineering & Mines and of the Civil Engineering Department were consulted as well, and no information regarding assessment for the Master of Science in Sustainable Energy Engineering was found there either.

3. ASSESSMENT RESULTS

- | | | | |
|--|--------|-------------|-------------------|
| Were any assessment results reported? | YES___ | NO <u>X</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:

The Annual Report of the Chemical Engineering Department contains no assessment information for the Masters of Science in Sustainable Energy Engineering. The annual reports of the School of Engineering & Mines and of the Civil

Engineering Department were consulted as well, and no information regarding assessment for the Masters of Science in Sustainable Energy Engineering was found there either.

4. CLOSING THE LOOP

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

YES _____ NO X 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:

The report says that a scheme of formal annual progress review meetings has been implemented as a requirement for all graduate students in order to guarantee that students receive feedback from thesis or dissertation committees, including as to progress toward graduation. It is does not appear that this action was taken on the basis of assessment, and the action does not address student learning goals.

SUMMARY

Strengths

- _____ 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.
- _____ Results are reported.
- _____ Results are tied to closing the loop.
(Decision-making is tied to evidence.)

Areas for Improvement

- X No specific plan for assessment is in place.
- X Student learning goals are not well-articulated.
- X Assessment methods are not clearly described.
- X Assessment methods are not appropriately selected.
- X Assessment methods are not well-implemented.
- _____ A single type of assessment methods predominates.
- X 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:

The Chemical Engineering graduate program has no assessment plan for the Masters of Science in Sustainable Energy Engineering that can be referenced.

MATERIALS REVIEWED

- X Annual report
- _____ Appendices (cited in annual report)
- _____ Other (please describe)

- _____ Assessment plan (as posted)
- X Previous assessment review

Reviewer(s):	Name	Eric E. Johnson	Cassie Gehardt
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Section 1: N Section 2: N Section 3: N Section 4: N

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

UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in 2011 Annual Reports
GRADUATE PROGRAMS

DEPARTMENT Chemical Engineering – Ph.D. in Chemical Engineering **DATE** April 24, 2012

COMMITTEE MEMBER(S) CONDUCTING REVIEW Eric E. Johnson and Cassie Gerhardt

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>X</u> | QUALIFIED Y/N <u> </u> |
| • Do goals address student learning? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u>X</u> |

Comments:

There is no posted assessment plan for the Ph.D. program; however, the Annual Report does contain learning goals. The goals referenced lack specificity. For instance, Student Learning Goal 3 is “Student Learning Goal 3: Graduates will be well prepared for a career in industry, government, or academia in the field of chemical engineering.”

The objectives under the goals reference tasks that students are expected to complete rather than learning objectives, per se.

2. ASSESSMENT METHODS

- | | | | |
|--|----------------|---------------|--------------------------|
| Were any specific assessment methods referenced? | YES <u> </u> | NO <u>X</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 <u> </u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |

Comments:

The Annual Report states that the Chemical Engineering Ph.D. program has begun collecting data for future assessment, and notes that the program began enrolling students in 2010. No mention is made of what assessment methods are being used.

3. ASSESSMENT RESULTS

- | | | | |
|--|----------------|---------------|--------------------------|
| Were any assessment results reported? | YES <u> </u> | NO <u>X</u> | QUALIFIED Y/N <u> </u> |
| • If so, were the results clear in terms of how they specifically affirm achievement of goals? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |
| • If so, were the results clear in terms of how they indicate need for improvement? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |
| • Were the results tied to goals for student learning? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |

Comments:

The Annual Report states that the performance and progress of the six doctoral students “is being monitored for future assessment,” but no results are reported.

4. CLOSING THE LOOP

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

YES _____ NO X 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:

The report says that a scheme of formal annual progress review meetings has been implemented as a requirement for all graduate students in order to guarantee that students receive feedback from thesis or dissertation committees, including as to progress toward graduation. It is does not appear that this action was taken on the basis of assessment, and the action does not address student learning goals.

SUMMARY

Strengths

- _____ 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.
- _____ Results are reported.
- _____ Results are tied to closing the loop.
- _____ (Decision-making is tied to evidence.)

Areas for Improvement

- X No specific plan for assessment is in place.
- X Student learning goals are not well-articulated.
- X Assessment methods are not clearly described.
- X Assessment methods are not appropriately selected.
- X Assessment methods are not well-implemented.
- _____ A single type of assessment methods predominates.
- X 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:

The Chemical Engineering graduate program has no assessment plan for the Ph.D. in Engineering that can be referenced. We recommend the development of an appropriate assessment program.

MATERIALS REVIEWED

- X Annual report
- _____ Appendices (cited in annual report)
- _____ Other (please describe)

- _____ Assessment plan (as posted)
- X Previous assessment review

Reviewer(s):	Name	Eric E. Johnson	Cassie Gehardt
	Department	School of Law	Memorial Union
	Phone Number	701-777-2264	701-777-3667
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Section 1: N Section 2: N Section 3: N Section 4: N

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
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UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in 2011 Annual Reports
UNDERGRADUATE PROGRAMS

DEPARTMENT Chemical Engineering, B.S. DATE April 17, 2012

COMMITTEE MEMBER(S) CONDUCTING REVIEW Eric E. Johnson and Cassie Gerhardt

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>X</u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |
| • Do goals address student learning? | YES <u>X</u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |

Comments:

Learning goals and objectives are comprehensive and are stated in a manner that is both specific and capable of measurement and evaluation.

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

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

The department's goals appear to have been thoughtfully constructed to further the Essential Studies program.

2. ASSESSMENT METHODS

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

Comments:

The assessment methods appear appropriate, and they are spelled out in detail.

3. ASSESSMENT RESULTS

Were any assessment results reported?	YES <u>X</u>	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 <u>X</u>
• If so, were the results clear in terms of how they indicate need for improvement?	YES ____	NO ____	QUALIFIED Y/N <u>X</u>
• Were the results tied to goals for student learning?	YES ____	NO ____	QUALIFIED Y/N <u>X</u>

Comments:

It appears from the report that assessment results were gathered, and that those assessment results were clear in relation to affirming goals and suggesting needs for improvement. The annual report did not, however, contain assessment results themselves.

In addition to departmental goals, some assessment results may be applicable to institutional and Essential Studies goals. Indicate any goals for which the department presents findings, and, for indicated items, describe findings 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:

Because assessment results themselves do not appear in the report, it is not possible to opine as to how those assessment results may be applicable to Essential Studies goals.

4. CLOSING THE LOOP

Were any actions taken on the basis of assessment results reported?	YES <u>X</u>	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 <u>X</u>

Comments:

The report contains numerous examples of loop-closing activities; however, because specific results are not reported, it is not possible to say – from the information in the report – that the changes directly address goals for student learning.

SUMMARY*Strengths*

- ☒ 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.
☐ 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.
☐ 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:

The Chemical Engineering department has a well-crafted assessment plan that appears to exhibit considerable utility. Moreover, assessment activities appear to have borne fruit.

It would be helpful for outsiders reviewing the department's assessment activities if results were directly reported in the annual report. A lack of reporting of assessment results was also noted in this Committee's 2009 report.

The department is to be commended on its thoughtful assessment program.

MATERIALS REVIEWED

- ☒ Annual report
☐ Appendices (cited in annual report)
☐ Other (please describe)
- ☒ Assessment plan (as posted)
☒ Previous assessment review

Reviewer(s):	Name	Eric E. Johnson	Cassie Gehardt
	Department	School of Law	Memorial Union
	Phone Number	701-777-2264	701-777-3667
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Section 1: Y Section 2: Y Section 3: ? Section 4: Y

Coding Key:

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

UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in 2011 Annual Reports
GRADUATE PROGRAMS

DEPARTMENT Chemical Engineering – Masters Programs **DATE** April 24, 2012

COMMITTEE MEMBER(S) CONDUCTING REVIEW Eric E. Johnson and Cassie Gerhardt

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>X</u> |
| • Do goals address student learning? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u>X</u> |

Comments:

Student learning goals are set out in the assessment plan, but they lack specificity. For instance, Student Learning Goal 1 is “Graduates will have mastered selected topics in chemical engineering and related areas to achieve their specific goals and objectives.”

The objectives under the goals reference tasks that students are expected to complete rather than learning objectives, per se.

The same issues were noted in the University Assessment Committee’s 2009 report, and the departmental assessment plan, dated 2004-2005, has apparently not been revised since. The Committee’s 2009 report suggested incorporating objectives identifying specific skills or values that a student should exhibit. We echo that advice.

We note that there is no information in the Annual Report or assessment plan referencing the M.Eng. degree, as such.

2. ASSESSMENT METHODS

- | | | | |
|--|-----------------|----------------|---------------------------|
| Were any specific assessment methods referenced? | YES <u>X</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>X</u> |
| • Were both direct and indirect assessment methods used as components of a “multiple measures” approach? | YES <u>X</u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |

Comments:

There are multiple modes of assessment, many of which are very appropriate. However, some methods seem unlikely to be probative, including “[c]ourse grades [and] credit hour progress.” We also echo the 2009 report suggestion:

One particular method of assessing student learning that was noted in this table, however, was “draft program of study (POS) completed” as a way of measuring student learning goal #1 “Graduates will have mastered selected topics in chemical engineering to achieve their specific goals and objectives”. This particular method (completing a POS) most likely would not ensure that a student would master chemical engineering concepts or topics and the department may want to reconsider this assessment method.

3. ASSESSMENT RESULTS

- | | | | |
|--|-----------------|----------------|---------------------------|
| Were any assessment results reported? | YES <u> </u> | NO <u> </u> | QUALIFIED Y/N <u>X</u> |
| • If so, were the results clear in terms of how they specifically affirm achievement of goals? | YES <u> </u> | NO <u>X</u> | QUALIFIED Y/N <u> </u> |

- If so, were the results clear in terms of how they indicate need for improvement? YES____ NO X QUALIFIED Y/N ____
- Were the results tied to goals for student learning? YES____ NO X QUALIFIED Y/N ____

Comments:

The annual report discloses that assessment data collected over a multi-year period was evaluated by the ChE Graduate Committee before the end of 2010. The report does not, however, indicate what the assessment results were, nor does the report indicate how the results related to goals. Based on the department's self-study, the report concluded that the graduate program "is meeting our educational objectives and learning goals." It is not clear, however, how this conclusion is based on assessment results. The report also says, "An area for improvement noted by the review based on student exit interviews is the need to improve advising pertaining to progress toward degree requirements." This observation seems relevant to programmatic review, but not to educational assessment, per se.

4. CLOSING THE LOOP

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

YES____ NO____ QUALIFIED Y/N X

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

YES____ NO X QUALIFIED Y/N ____

Comments:

The report says that a scheme of formal annual progress review meetings has been implemented as a requirement for all graduate students in order to guarantee that students receive feedback from thesis or dissertation committees, including as to progress toward graduation. It is not clear that this action was taken on the basis of assessment, and the action does not specifically address student learning goals.

SUMMARY*Strengths*

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

OVERALL SUMMARY AND RECOMMENDATIONS:

The Chemical Engineering graduate program may be viewing programmatic review activity as assessment activity. The department might undertake an effort to distinguish the two. Given the vagueness and problematic formulation of learning goals and objectives, and given the age of the current assessment plan, it might be a good time to review and revise.

We also suggest that the department create goals for the M.Eng. degree.

MATERIALS REVIEWED

<input checked="" type="checkbox"/> Annual report	<input checked="" type="checkbox"/> Assessment plan (as posted)
<input type="checkbox"/> Appendices (cited in annual report)	<input checked="" type="checkbox"/> Previous assessment review
<input type="checkbox"/> Other (please describe)	

Reviewer(s):	Name	Eric E. Johnson	Cassie Gehardt
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Section 1: ? Section 2: ? Section 3: N Section 4: N

Coding Key:

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