<u>UNDERGRADUATE PROGRAMS</u>

DEPARTMENT____*Space Studies*_____**DATE**___*2/17/15*_____

PROGRAM(S) COVERED IN REVIEW _____*Minor in Space Studies*_____

COMMITTEE MEMBER(S) CONDUCTING REVIEW__ *Mary K. Askim-Lovseth and Surojit Gupta*_____

1. STUDENT LEARNING GOALS

- Were any goals referenced?   YES__*X*_   NO____   QUALIFIED Y/N ___
- If so, were goals well articulated?   YES__*X*_   NO____   QUALIFIED Y/N ___
- Do goals address student learning?   YES__*X*_   NO____   QUALIFIED Y/N ___

Comments:

The Department of Space Studies offers only an undergraduate minor with the expectation that it will develop into an undergraduate major. The Assessment Plan posted on the website (April 2012) noted two goals that addressed student learning. These two goals are the same as two of the six goals of the graduate program.

In addition to the program 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 program goals.
_____ 1 Communication – written or oral ("able to write and speak in various settings with a sense of purpose/audience")
___*X*___ 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 program goals and alignment with institutional and Essential Studies goals:

Goal 2 has some alignment with the critical thinking Essential Studies goal, "Understands the interrelationships between technical and social aspects of space enterprises and can effectively apply these to problem-solving."

2. ASSESSMENT METHODS

Were any specific assessment methods referenced?	YES__*X*_	NO____	QUALIFIED Y/N ____
• If so, were specifically chosen assessment methods appropriately aligned with individual goals?	YES_____	NO____	QUALIFIED Y/N __*X*_
• Were both direct and indirect assessment methods used as components of a "multiple measures" approach?	YES_____	NO__*X*_	QUALIFIED Y/N ____

Comments:

It was noted that course papers, homework, presentations, and examinations (direct measures) are to be used but the reporting does not align with these artifacts. It appears that a summation of these measures are used. Both the Assessment Plan and Annual Report indicated that the data that are reported are to be the average GPA for the "substantially interdisciplinary courses (i.e., 200)" and a student "mastery" rating regarding conceptual understanding for each course. The anchors to the five-point rating scale were 'Substantially unacceptable' (0) to Noteworthy' (4). The targeted mean standard for the GPA was >3.00 and the course mean standard using the rating scale was noted to be >3.0, which was a descriptor of 'Good.' No indirect measures were noted.

It is unclear how these methods (GPA and rating scale) align as one of the goals related to applying the understanding of interrelationships to problem solving. There is no direct measurement of problem solving. In addition, GPAs and an aggregate mean regarding students' performance in a course based on a qualitative assessment do not allow the Department to identify distinct areas for improvement of student learning.

3. ASSESSMENT RESULTS

Were any assessment results reported?   YES____   NO__*X*_   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:

It was reported that the Department has "obtained a rather incomplete set of data."

In addition to program goals, some assessment results may be applicable to institutional and Essential Studies goals. Indicate any goals for which the program 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 program, institutional, and Essential Studies goals:

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:

There were no comments regarding closing the loop activities.

SUMMARY

Strengths	*Areas for Improvement*

_____ A specific plan for assessment is in place.   _____ No specific plan for assessment is in place.

__X_Student learning goals are well-articulated.   _____ Student learning goals are not well-articulated.

_____Assessment methods are clearly described.   _____ Assessment methods are not clearly described.

_____Assessment methods are appropriately selected.   __X_ Assessment methods are not appropriately selected.

_____Assessment methods are well-implemented.   __X_ Assessment methods are not well-implemented.

_____Direct and indirect methods are implemented.   __X_ A single type of assessment methods predominates.

_____Results are reported.   __X_ No results are reported.

_____Results are tied to closing the loop.   __X_ Results are not clearly tied to closing the loop.
    (Decision-making is tied to evidence.)   (Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

The Assessment Committee doesn't usually review academic minors, however, it is pleased to know that the Department is doing some preliminary assessment planning as it moves toward offering this as an undergraduate major.

It may be helpful to consider developing rubrics for each of the student learning goals that relate to specific competencies so that whatever artifacts are assessed, better insight can be realized regarding areas for improvement. The use of student means do not provide much insight into what the students do well and what needs improvement.

MATERIALS REVIEWED

__X__ Annual assessment report

_____ Annual Report

__X__ Assessment plan (as posted)

__X__ Previous assessment review

_____ Other (please describe)

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Section 1: __Y__   Section 2: __Q__   Section 3: __N__   Section 4: __N__

Coding Key:
        Y   = yes, this is done appropriately and well (bearing in mind the kind of program(s) reviewed and recognizing that assessment is a cyclical process, i.e., with additional kinds of data to be collected and analyzed in other years)
        Q   = qualified yes as action or progress is apparent; however, evidence is lacking that this is completely and appropriately done
        N   = no, it is unclear whether it was done at all, or it is not done in relationship to student learning

Revised Sept 24, 2014

GRADUATE PROGRAMS

DEPARTMENT____*Space Studies*_____**DATE**___*2/4/15*_____

PROGRAM(S) COVERED IN REVIEW _____*M.S.*_____

COMMITTEE MEMBER(S) CONDUCTING REVIEW__ *Mary K. Askim-Lovseth and Surojit Gupta*_____

1. STUDENT LEARNING GOALS

- Were any goals referenced?   YES_X__   NO_____   QUALIFIED Y/N ___
- If so, were goals well-articulated?   YES_X__   NO_____   QUALIFIED Y/N ___
- Do goals address student learning?   YES_X__   NO_____   QUALIFIED Y/N ___

Comments:

The Department of Space Studies offers a campus and online Master of Science..

The Assessment Plan was updated in April 2012 with the new student learning goals of the program (a recommendation of the last review).

Student learning goals (SLG) are well written. Specific outcomes for each of the goals are directly related to the student's "background, career goals, availability of resources, and appropriate focus" and determined jointly by the student and his/her primary advisor. Goals related to interdisciplinary understanding (SLG 1), conceptual understanding (SLG 2), and critical thinking and problem solving (SLG 3) were assessed in recent semesters. SLGs 5 and 6, participation in faculty research projects and contribution to the project team environment, respectively, have more intermittent assessment because students are not consistently involved in these activities.

2. ASSESSMENT METHODS

Were any specific assessment methods referenced?   YES_X__   NO_____   QUALIFIED Y/N _____
- If so, were specifically chosen assessment methods appropriately aligned with individual goals?   YES_X__   NO_____   QUALIFIED Y/N _____
- Were both direct and indirect assessment methods used as components of a "multiple measures" approach?   YES_____   NO_X__   QUALIFIED Y/N _____

Comments:

Direct assessment methods included "assessments of individual courses, independent studies, Capstone project performance and comprehensive examinations." The Assessment Plan had an alignment matrix of the assessment measures with the student learning goals. In addition, it identified specifics for the measures and a standard (>3.0). The standard was based on a rating scale of 0 to 4 that had different descriptors for the different measures. For course assessment, the independent study, and thesis committee assessment, the anchors to the scale were 'Substantially unacceptable' to Noteworthy.' The 3 rating indicated 'Good.' These measures would provide a very general assessment and would be difficult to delineate specific areas of conceptual knowledge where learning could be improved. This would also include the use of GPAs for specific courses. Regarding the comprehensive examination, the anchors were Fail' to 'Pass.' The 3 rating represented 'Pass—Low Pass.' The capstone team project had a more developed rubric with four competencies.

No indirect assessment was noted in the Annual Report though student self-assessment and a self-rating by alumni were indicated in the Assessment Plan. These were to be developed Spring 2013.

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 _X__
- 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_X__ NO____ QUALIFIED Y/N ____

Comments:

Mean scores were reported for several semesters along with composite means for interdisciplinary understanding (2.62 composite mean), conceptual understanding (3.03), critical thinking/problem solving (2.95), participation in research (3.02), and contribution to team project environment (3.00); the latter two having limited data. For AY 2013-14, four goals (exception being conceptual understanding) were below the 3.0 standard. As with interdisciplinary understanding and conceptual understanding, critical thinking/problem solving is also assessed in the comprehensive exam. The mean over the semesters for critical thinking/problem solving has averaged 2.17 with the composite mean over the semesters for the overall exam has been 2.13.

This type of data reported makes it difficult to determine any specifics that could help the Department in enhancing student learning. For example, with critical thinking/problem solving students could have difficulty with identifying the problem, selecting an appropriate method to solve the problem, solving the problem, or defending the solution. Competencies could be higher in one area than other but that would not be depicted in a composite mean score.

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____ QUALIFIED Y/N _X__

Comments:

Recommendations noted were to review the comprehensive examination process for appropriateness and adequacy in measuring student learning and to monitor the "seasonal behavior" of the results as to why that is occurring (a seasonal pattern was noted in reporting the results).

Determining how to assess the experiential learning goal (SLG 4) and developing the student self-assessment indirect measure were ongoing actions to implement the Department's Assessment Plan.

SUMMARY

Strengths	*Areas for Improvement*
____ A specific plan for assessment is in place.	____ No specific plan for assessment is in place.
_X__Student learning goals are well-articulated.	____ Student learning goals are not well-articulated.
____Assessment methods are clearly described.	____ Assessment methods are not clearly described.
____Assessment methods are appropriately selected.	__X_ Assessment methods are not appropriately selected.
____Assessment methods are well-implemented.	__X_ Assessment methods are not well-implemented.
____Direct and indirect methods are implemented.	____ A single type of assessment methods predominates.
____Results are reported.	____ No results are reported.
____Results are tied to closing the loop.	__X_ Results are not clearly tied to closing the loop.
(Decision-making is tied to evidence.)	(Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

The Space Studies Department has developed clear student learning goals for the graduate program and has used multiple direct measures to assess student learning.

Since the caliber of student performance has not improved over the last few years, it may be because the assessment data that are collected do not provide much meaningful information to make relevant closing the loop decisions. It may be helpful to consider developing rubrics for each of the student learning goals that relate to specific competencies so that whatever artifacts are assessed, better insight can be realized regarding areas for improvement. Of note is the data regarding critical thinking/problem solving. Faculty discussions regarding the steps in this process could lead to developing a different measurement tool, mapping where this skill is reinforced throughout the program, changes to curriculum, etc. The Committee looks forward to the Department's next assessment review to see how it has addressed closing the loop.

Another point to discuss would be are there any differences between the campus and online students regarding student learning outcomes. It may be worthwhile to segment the data to determine this. If differences occur, the Department is provided another distinct closing the loop opportunity.

MATERIALS REVIEWED

__*X*__ Annual assessment report
_____ Annual report
__*X*__ Assessment plan (as posted)
__*X*__ Previous assessment review
_____ Other (please describe)

Reviewer(s):	Name	*Mary K. Askim-Lovseth*	*Surojit Gupta*
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Section 1: __*Y*__   Section 2: __*Q*__   Section 3: __*Q*__   Section 4: __*Q*__

Coding Key:
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