Annual Academic Assessment Report Cover Sheet

Assessment reports are due the 1st Wednesday after the Fall Term
Email to: assessment@unlv.edu

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<th>Program Information:</th>
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<td>Program Assessed</td>
<td>Geoscience Ph.D.</td>
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<td>Department</td>
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<td>College</td>
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<td>Department Chair</td>
<td>Terry Spell</td>
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<td>Assessment Coordinator</td>
<td>Brenda Buck</td>
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<td>Date Submitted</td>
<td>December 1, 2016</td>
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Contact Person for This Report

<table>
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<tr>
<th>Name</th>
<th>Brenda Buck</th>
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<tr>
<td>Phone</td>
<td>702-895-1694</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:buckb@unlv.nevada.edu">buckb@unlv.nevada.edu</a></td>
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Please attach a narrative (not to exceed 4 pages, excluding appendices) addressing the following:

- What are the student learning outcomes? Please provide a numbered list.
- Which learning outcomes were assessed?
- How were they assessed? (Programs must use at least one direct assessment of student learning.)
- Undergraduate programs should assess at least one University Undergraduate Learning Outcome (UULO) each year, which may or may not overlap with a program learning outcome.
- Graduate programs should assess at least one outcome related to one of the following graduate level requirements each year:
  - student engagement in research, scholarship, creative expression and/or appropriate high-level professional practice.
  - activities requiring originality, critical analysis and expertise.
  - the development of extensive knowledge in the field under study.
- What was learned from the assessment results?
- How did the program respond to what was learned?

Please limit the narrative portion of your report to no more than four pages. You may attach appendices with data, tables, charts, or other materials as needed. Please explain the relevant conclusions from any appendices in your narrative. Please contact the Office of Academic Assessment if you have questions or need assistance.
Ph.D. Geoscience Program

Learning Outcomes

1. Demonstrate the ability to create a research problem by identifying questions and defining and testing hypotheses.
2. Demonstrate the ability to do original and creative research.
3. Demonstrate an understanding of scientific ethics.
4. Demonstrate an understanding and appreciation for scientific inquiry / scientific method.
5. Demonstrate the ability to search existing scientific literature for work relevant to a specific problem.
6. Demonstrate the ability to execute problem-specific skills at an advanced level.
7. Demonstrate the ability to design and carry a substantial independent research project through to completion.
8. Demonstrate the ability to successfully present the results of a scientific inquiry in oral format (either poster or oral presentation).
9. Demonstrate the ability to prepare publications and submit them to peer-reviewed journals.
10. Demonstrate an excellent knowledge of at least one field of specialization.

Learning Outcomes 1; 5; 8

GEOL 701: Research Proposal for Geological Society of America Submission
Ph.D. Students: Enrollment 4, Average grade B+
100% performed satisfactorily (4/4)
0% performed unsatisfactorily (0/4)

GEOL 701: Final Research Proposal
Ph.D. Students: Enrollment 4, Average grade A-
100% performed satisfactorily (4/4)
0% performed unsatisfactorily (0/4)

GEOL 701: Research Proposal Oral Presentation (1st attempt)
Ph.D. Students: Enrollment 4, Average grade A-
100% performed satisfactorily (4/4)
0% performed unsatisfactorily (0/4)

GEOL 701: Research Proposal Oral Presentation (Final Presentation)
Ph.D. Students: Enrollment 4, Average grade A
100% performed satisfactorily (4/4)
0% performed unsatisfactorily (0/4)
Faculty Feedback/Advisor Reports
Ph.D. Students: Enrollment 16. 100% satisfactory feedback.

Learning outcomes 1, 5, and 8 are assessed by performance in specific assignments in GEOL 701. These include:

1. Writing an original research proposal for submission to the Geological Society of America.
2. Writing an original research proposal for their planned dissertation
3. Presenting their research proposal to the class audience (described above as 1st presentation), and
4. Presenting their research proposal to the entire department in a public setting (Final presentation).

These written and orally-delivered proposals are original research developed by the graduate student to test hypothesis and require significant literature review in their fields to explain what is already known, and what specific aspect of the science they propose to study. These assignments require students to demonstrate proficiency in the processes of scientific research and research design as applied to modern geoscience, and includes scientific approaches to field and laboratory research, research and professional ethics, writing, and public presentation.

This year 4 Ph.D. students enrolled in this class. All of the students performed well in these 4 measurements used to evaluate these 3 learning objectives. One student earned a B in the initial oral presentation but improved significantly in the final presentation (A/A-).

Additionally, these Learning Outcomes are also measured through feedback from faculty. Feedback from faculty indicate no concerns about these learning outcomes in our current group of Ph.D. graduate students (16 students). Because all indications are that students are meeting these learning objectives, no specific action items are planned for the upcoming year, other than to continue as is for these learning objectives.

Although this issue does not directly measure any of our learning objectives, there are concerns regarding Ph.D. student completion of comprehensive exams in a timely manner:

- 38% of current students (6 of 16) are behind in selecting their Ph.D. committees and filling out degree program paperwork.
- 38% are also behind on taking their comprehensive exams on time (6 of 16 – different set of students than above). Three of the 6 are advised by one faculty member; 2 of the 6 by another faculty; and 1 student was delayed because the advisor left UNLV. This student has now switched advisors and should catch up in this coming year.
The Assessment Committee in cooperation with the Graduate Student Committee, is concerned about these results because this situation results in students taking longer to complete their degree program. The planned action item based on the above data and discussion among faculty is to have the Graduate Coordinator play a larger, stronger, and more consistent communicative role in encouraging students and advisors to complete important paperwork and milestones in a timely manner. Unsatisfactory evaluations will be more rigorously implemented when deadlines are not met. A more rigorous implementation of the existing rules, including loss of funding will be applied.

Additionally, many changes are being discussed as to how the timing for progression through the program should occur and how these deadlines can be better structured to help student learning.

Our department has also agreed to apply scholarship monies to better support our students financially. It is hoped that this measure will help alleviate financial pressures on students allowing them to focus better on their learning and progression through the program.

The goals for the program include trying to obtain increased research funding for students, continued excellence in recruitment, and more infrastructural research support, particularly in laboratory equipment/facilities.

Lastly, the assessment committee discussed our 3yr assessment plan with recommendations for changes and improvements to be developed and incorporated into the next plan. Action items are to take these suggestions to the entire department faculty during the Spring 2017 semester for their consideration and implementation.

Geoscience remains one of the top ranked programs at UNLV, with a national ranking in the top 100 university Geology programs. The Hydrogeology Program was also ranked by the largest groundwater association in the world as in the top 100 programs in North America.