**Student Learning Outcomes Assessment**  
**2012-2013**

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**Introduction**

The table below contains student learning outcomes (SLO) for the BA and BS degrees in Geology at EWU.

<table>
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<tr>
<th>BA-Geology</th>
<th>1. Develop effective skills in oral and written communication in order to be successful in the field of geology.</th>
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<td>2. Understand basic principles of the history and development of earth through time.</td>
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<td>BS-Geology</td>
<td>3. Learn and demonstrate the proper use of office, laboratory and field equipment used in the field of geology.</td>
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<td></td>
<td>4. Have a solid understanding of geologic principles and processes that operate in the complex systems of the earth.</td>
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I have assessed SLO 3 (for the BS and BA degrees) by analyzing student performance in GEOL 490, Geology Field Camp, taught in summer, 2013.

**Geology Field Camp**

GEOL 490 is a required disciplinary capstone for the BS degree program and an optional capstone and geology elective for the BA degree program. Students take GEOL 490 in the summer following their senior year. It is a 4-week course taught in the Ruby and Pioneer Mountains of southwestern Montana. Students spend 6 days per week in the field making maps and solving problems related to all aspects of
geology including mineralogy, petrology, structural geology, sedimentology, and paleontology. They spend evenings and their one day off per week drafting geologic maps and cross-sections that illustrate their interpretations of surface and subsurface geology. In so doing, they use field and lab skills, tools, and equipment that professional geologists apply to real-world geological problems.

EWU's Geology Field Camp is attended by outside students as well as EWU geology majors. Virtually all BS degree programs in geology in the United States require Field Camp for graduation, but most universities do not offer their own Field Camp. Instead, their students attend Field Camps like ours that admit outside students. Last year (summer, 2013) outside students came to EWU's camp from the following universities:

- Pacific Lutheran University (6 students)
- Boise State University (3 students)
- Franklin and Marshall College (1 student)
- California State University, San Bernardino (1 student)

Overall there were 7 EWU students and 11 outside students used in this assessment. This was the first year that we accepted greater numbers of outside students than numbers of our own EWU students. Last year's graduating class was unusually small; in contrast, we have 27 EWU students scheduled to take Geology Field Camp in summer, 2014.

One of the advantages of admitting students from other universities to our field camp is that it permits us to compare the abilities of our students with the abilities of students from other geology programs. It should be noted that all of the outside universities listed above have academically selective admission processes. Pacific Lutheran is the 12th ranked regional university in the west by U.S. News and World Report (2013 ranking). Franklin and Marshall is ranked 46th nationally among liberal arts colleges. California State University, San Bernardino is the 54th ranked regional university in the west, and Boise State is ranked 62nd in the west, tied with EWU.

**SLO Assessment**

SLO assessment is based on students' overall course grades and also on students' grades on their independent final exam. The overall grade is based in part on large multi-day projects that utilize group mapping, analysis, and geologic interpretation. Therefore the overall grade, while an indicator of the success or failure of our department’s ability to achieve desired student learning outcomes, is not solely based on a single student’s abilities. Therefore I am also assessing each student’s independent final exam result as no collaborative work was permitted on this particular one-day mapping project. Note that students used the tools and equipment available to professional geologists to solve geological problems on both individual and group projects.
For the purposes of assessing success in achieving SLO’s, I compared EWU students’ results in GEOL 490 with those of students from outside institutions in GEOL 490 for summer, 2013.

Results

Below are the averages of final exam grades (percent) and overall course grades (percent) for (a) students from EWU and (b) outside students from the universities listed above.

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Final Exam (%)</th>
<th>Overall Course Grade (%)</th>
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<tbody>
<tr>
<td>EWU</td>
<td>77.9</td>
<td>85.3</td>
</tr>
<tr>
<td>Outside Students</td>
<td>78.4</td>
<td>85.8</td>
</tr>
</tbody>
</table>

The highest score on the final exam was 100%, achieved by a student from Pacific Lutheran. Two EWU students received scores of 95%, the second highest grade on the independent final exam. The three highest overall grades for the class were 89.6%, 89.3%, and 88%, all by EWU students. The highest overall grade for a non-EWU student was 87.8% (Boise State student).

Conclusions

Students from Eastern Washington University performed as well as students from other universities (including highly selective and highly ranked Pacific Lutheran) on both the independent final exam and the overall course grade. EWU students were 0.5 percentage points lower than outside students in the final exam average, a negligible difference. EWU students also trailed outside students by 0.5 percentage points in the overall grade average. The three highest class grades were achieved by EWU students.

EWU students’ grades demonstrate a high level of understanding and performance in GEOL 490: Geology Field Camp. These results indicate that the EWU Geology Department is successful in achieving desired student learning outcomes.