

**Template  
Degree Program  
Assessment of Student Learning Plan  
Kansas State University**

- Check the box if your program's student learning outcomes have been modified since November 2003. If so, please email ([apr@ksu.edu](mailto:apr@ksu.edu)) or attach a hard copy to this document.

**A. College, Department, and Date**

College: Arts & Sciences  
Department: Geology  
Date: Oct. 28, 2004

**B. Contact Person(s) for the Assessment Plans**

Mary Hubbard, Department head

**C. Degree Program**

B.S./B.A. in Geology

**D. Assessment of Student Learning Three-Year Plan**

**1. Geology Degree Program Student Learning Outcomes**

To qualify for a B.S. or B.A. degree in Geology, students will have demonstrated:

- Competence in the preparation and delivery of oral presentations in classroom situations.
- Competence in information retrieval, from print, database, and web-based resources.
- Experience in networking with others, such as participation in professional societies.

Relationship to K-State Student Learning Outcomes :

Geology/KSU SLOs	University-wide SLOs ( <u>Undergraduate Programs</u> )					Program SLO is conceptually different from university SLOs
	Knowledge	Critical Thinking	Communication	Diversity	Academic / Professional Integrity	
1. Oral presentation			X			
2. Information retrieval	X	X	X			
3. Networking			X	X	X	

**2. How will the learning outcomes be assessed? What groups will be included in the assessment?**

- Competence in the preparation and delivery of oral presentations in classroom situations.

Learning outcome will be assessed in classroom situations using the included presentation rubric. At least the following courses that are required for a BS in geology will be using the rubric:

Geol 502: Mineralogy,  
Geol 520: Geomorphology,  
Geol 530: Structural Geology,  
Geol 560: Field Methods,  
Geol 630: Stratigraphy-Sedimentation, and  
Geol 750: Geologic Evolution of Planet Earth.

The score that each student obtained for each course will be archived in a portfolio, and the effectiveness of the assessing tool and evidence of student progress in oral presentation can be easily measured by comparing the scores obtained at different times. This method is a mixture of both direct and indirect measures of student learning. There are about 10 to 20 students in each of those courses. All the students who take the courses will be assessed.

- Competence in information retrieval, from print, database, and web-based resources.

The competence in information retrieval can be assessed by the breadth and depth of the citations in term reports and senior theses. It can also be assessed by judging the capability of locating reference books or articles to solve homework problems. Courses that routinely require term papers include:

Geol 502: Mineralogy,  
Geol 520: Geomorphology,  
Geol 530: Structural Geology,  
Geol 630: Stratigraphy-Sedimentation,  
Geol 642: Field Geophysics,  
Geol 650: Exploration Geophysics, and  
Geol 750: Geologic Evolution of Planet Earth.

Also attached is a writing rubric used to assess student capability in writing. The scores for the "References" part in the rubric will be monitored for assessing competence in information retrieval.

While the number of citations is a direct measure of student learning, the depth is an indirect measure. There are about 10 to 20 students in GEOL 502, 520, 530, and 630 and 5 to 10 students in Geol 642, 650, and 750. Again, all the students in these courses will be assessed.

- Experience in networking with others, such as participation in professional societies.

This can be assessed in a number of ways. First, we will track the number of students who become members of local, regional, and national professional societies such as Geological Society of America, American Geophysical Union, Association of American Petroleum Geologists, and Society of Exploration Geophysicists. Second, we will monitor the number of students who attend professional meetings. Third, we will quantify networking activities among students with an exit survey with direct questions. Forth, we will observe the level of involvement of the students in activities during the annual advisory council meeting. While the first three are direct measures, the last one is an indirect one. All majors will be assessed.

**3. When will these outcomes be assessed? When and in what format will the results of the assessment be discussed?**

During the next three years starting from Spring, 2005, students will be assessed according to the following plan.

- Competence in oral presentation will be assessed at the end of each semester for the next three years, starting from spring, 2005.
- Competence in information retrieval will be assessed when the term reports, senior theses, or homework assignments are being graded.
- Experience in networking will be assessed at the end of each academic year by asking the students to fill out a form about networking activities that they participated in during the past 12 months.

Results of the assessment for the current and previous years will be discussed at the end of each academic year by the faculty, shortly after the data on student networking are collected.

We will also present the results to the geology advisory council in each October to obtain their feedback.

**4. What is the unit's process for using assessment results to improve student learning?**

The faculty in Geology will meet each year in May to review the portfolios of the students. Based on the review, we will make revisions to the curriculum and/or individual classes to ensure all students meet our SLO goals. In addition, we will make appropriate improvements in the assessment process for the ultimate goal of improving student learning.

## **Graduates from the B.S. and B.A. programs in Geology will have acquired:**

### (KSU knowledge group):

1. Knowledge of basic earth materials, including their elemental composition, their normal occurrence as ions, molecules, minerals, and rocks, and their physical and chemical properties.
2. An understanding of important geologic processes and their results, such as plate tectonics, mountain building, isostasy, volcanism, the origins and evolution of igneous, sedimentary, and metamorphic rocks, earth-surface processes, the hydrologic cycle, and the origin and evolution of life on earth.

### (KSU critical thinking group):

3. An ability to apply fundamental geological techniques, such as field mapping and petrographic analysis, toward the resolution of geological problems, and an ability to think in three and four (time) dimensions.
4. An appreciation of problems that might be faced in specialized fields within geology, such as paleoenvironmental reconstruction, petroleum exploration, and groundwater systems, dating of igneous rocks or metamorphic events, location of active faults, the application of computers to geological problems, and the significance of data.

### (KSU communication group):

5. Competence in the preparation of written and oral reports of research, including the use of graphical methods to summarize and present numerical data.

### (KSU diversity group):

6. An ability to work well with others, in classroom, laboratory, and field projects, and an appreciation for the challenges involved in the application of a global science to a multinational world.

### (KSU ownership of learning group):

7. A competence in information retrieval, from print, database, and web-based resources, and an appreciation of the responsibilities involved in using information, including accuracy, intellectual property rights, and plagiarism.

### (KSU diversity & Ownership of Learning groups):

8. Experience in networking with others, such as participation in professional societies.
9. A recognition of the need for geologists to improve public awareness of the importance of this field to society.

## INFORMATIVE PRESENTATION EVALUATION

Student: \_\_\_\_\_

5= excellent

4= good

3= average

2= below average

1= poor

Topic: \_\_\_\_\_

Time: \_\_\_\_\_

ELEMENTS	RATING	WEIGHT	POINTS	COMMENTS
<b>INTRODUCTION</b> gains attention establishes credibility relevant to audience contains central idea previews presentation		x 2 =		
<b>ORGANIZATION</b> contains effective main divisions contains clear sub-points contains transitions includes clear explanations		=		
<b>CONTENT</b> distinguishes hypothesis and evidence data reviewed clearly conclusions drawn supported by data		x 4 =		
<b>SUPPORTING MATERIALS</b> number/quality/variety sources clearly identified source credentials given published journal articles used sound reasoning		x 4 =		
<b>VISUAL AIDS</b> clear (large, simple) appropriate well-timed and presented enhancement of message		x 2 =		
<b>PHYSICAL DELIVERY</b> extemporaneous eye contact gestures poise		x 2 =		
<b>VOCAL DELIVERY</b> rate pitch volume diction no fillers		x 2 =		
<b>CONCLUSIONS</b> summary or review effective final thought		x 2 =		
<b>OUTLINE</b> purpose thesis correct numbering/lettering bibliography		=		

Grade: \_\_\_\_\_

# WRITING RUBRIC

Name: \_\_\_\_\_

report title \_\_\_\_\_ date \_\_\_\_\_

points: [0 = missing]	3	2	1	score
<b>abstract</b>	succinct & complete description of purpose, methods, results, and primary conclusions	adequate synopsis of purpose, methods, results, and primary conclusions	weak synopsis of purpose, methods, major results, and primary conclusions	
<b>introduction</b>	thorough introduction to scientific problem; clearly and precisely explains purpose; answers who, what, where, how, and why; comprehensive review of previous work	adequate introduction to scientific problem; attempts to explain purpose; attempts to answer who, what, where, how, and why; adequate review of previous work	inadequate introduction to scientific problem; poor explanation of purpose and answers to who, what, where, how, and why; inadequate review of previous work	
<b>methods</b>	excellent overview and discussion of methods used	adequate overview and discussion of methods used	inadequate overview and discussion of methods used	
<b>results</b>	complete and clear description of results	adequate description of results	inadequate description of results	
<b>discussion</b>	thorough discussion of interpretations; thorough integration with previous work	adequate discussion of interpretations; adequate integration with previous work	inadequate discussion of interpretations; inadequate integration with previous work	
<b>conclusions</b>	brief, accurate conclusions; follow logically from study	adequate conclusions	conclusions do not follow logically from study	
<b>references cited</b>	complete, accurate citations in appropriate style	adequate citations generally in appropriate style	incomplete citations in inappropriate style	
<b>figures and tables</b>	well constructed and integrated with text; complete & accurate captions	adequately constructed and generally integrated with text; adequate captions	poorly constructed and not integrated with text; captions missing or poorly written	
<b>organization</b>	well organized	adequately organized	poorly organized	
<b>content</b>	proper and effective use of scientific vocabulary; accurate and precise description and interpretation	adequate use of scientific vocabulary; generally accurate, but not necessarily precise description and interpretation	inadequate use of scientific vocabulary; inaccurate and imprecise description and interpretation	
<b>citation</b>	most appropriate sources consulted and properly cited; language is the author's own	adequate consultation and citation of sources; language is the author's own	inadequate consultation and citation of sources; language is not the author's own ; <b>0 pts. = any information without proper citation</b>	
<b>writing mechanics</b>	almost no grammatical, mechanical, and spelling errors; consistently good paragraph structure	few grammatical, mechanical, and spelling errors; generally good paragraph structure	grammar, mechanics, and spelling often incorrect; or poor paragraph structure	
<b>writing style</b>	strong reader appeal; writing is fluid and easy to follow	writing is generally clear	writing is often difficult to follow or vague	
<b>comprehension</b>	demonstrates an excellent understanding of topic	demonstrates reasonable understanding of topic	demonstrates weak understanding	

[total possible pts.: 42] TOTAL SCORE (TS): \_\_\_\_\_

percentage (TS/42\*100): \_\_\_\_\_  
 [38 = 90%; 34 = 80%; 30 = 70%; 26 = 60%]

Comments:

