

Plan for Assessment of Courses in the UG General Education Core Curriculum

Department Name: Earth & Planetary Sciences

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I. Course Number and Title: EPS 105L, Physical Geology Laboratories

A. Course Goal #1: Students will learn the scientific method

B. Student Learning Outcomes (SLOs):

1. SLO 1: Students will be able to construct a hypothesis, propose a test, and then complete the test using quantitative and spatial data
Addresses UNM/HED Area III, Competencies, Describe the process of scientific inquiry, Solve problems scientifically

Course Goal #2: Students will practice data collection and management

1. SLO 1: Students will make measurements and make calculations using those measurements that lead to graphical display and interpretation of data
Addresses UNM/HED Area III, Competencies, Apply quantitative analysis to scientific problems

Course Goal #3: Students will practice data interpretation and pattern recognition

1. SLO 1: Students will be able to analyze graphical data and use the graphs to make interpretations
Addresses UNM/HED Area III, Competencies, Solve problems scientifically

Course Goal #4: Students will report numerical data and interpretation with the appropriate geologic terms and geologic events

1. SLO 1: Students will complete a written report that effectively communicates an interpretation of quantitative and spatial data to evaluate a societally relevant geologic problem
Addresses UNM/HED Area III, Competencies, Communicate scientific information, Apply scientific thinking to real world problems
2. SLO 2: Students will provide written descriptions of rocks that correctly uses geological terminology and links these descriptions to an acceptable explanation of rock origins
Addresses UNM/HED Area III, Competencies, Communicate scientific Information and disciplinary content
3. SLO 3: Students will be able to provide a written explanation of the geologic history (including ages of events) of a location portrayed in photograph or diagram
Addresses UNM/HED Area III, Competencies, Communicate scientific information, Apply quantitative analysis to scientific problems and disciplinary content

Course Goal #5: Students will learn to interpret maps

1. SLO 1: Students will be able to interpret scales and elevations on a topographic contour map.

Addresses UNM/HED Area III, Competencies, disciplinary content

Course Goal #6: Students will learn about plate motions

1. SLO 1: Students will demonstrate understanding of plate motions

Addresses UNM/HED Area III, Competencies, Apply quantitative analysis to scientific problems and disciplinary content

C. How will evidence of learning be gathered?

1. What: For each SLO, identify one or more data collection points in the course.

Preferably these are samples of student work already in the syllabus.

Questions are assessed within laboratory exercises throughout the semester.

2. How: For this course, describe:

a. Will the assessment include evidence from all sections of the course, or some subset of sections? Address the validity of any proposed sample of sections.

Assessment will include evidence from a subset of sections, representing a majority of the students enrolled in the course.

b. Will the assessment include evidence from all students in the assessed sections or a sample? Address the validity of the proposed sample of students.

Assessment will include evidence from all students in the assessed sections, which will represent a majority of the students enrolled in the course.

c. Will all student learning outcomes for this course be measured every time? If not, how will the complete set of SLOs for the course be subset for measurement a chunk at a time?

A subset of the SLOs for the course will be measured, but eventually, all SLOs will be evaluated within a rotation of the offerings of the course.

3. When:

a. Is assessment of student learning outcomes already underway in this course? If not, in what term (e.g., Fall 2007) will assessment of student learning outcomes commence in this course?

Assessment of SLOs is already underway for most sections of the course, with a goal to include most sections of the course.

b. With what frequency (e.g., every term, a different term each year, etc.) will assessment of student learning outcomes take place in this course?

Assessment of some/all of the SLOs will take place every semester.

c. On what cycle will the complete set of SLOs for the course be assessed (e.g., all outcomes every term, a subset of outcomes each term with all outcomes every academic year,...)?

The goal is to assess the complete set of SLOs for most of the sections of the course, every academic year.

4. Who:

- a. Who will administer the measure or collect the student products?

Teaching Assistants, who teach the lab sections, will administer the measure and collect the products.

- b. Who will review/mark the products relative to the SLO statements and established qualitative criteria?

Coordinator of the lab, who collect their data will evaluate the questions and rubrics.

- c. Where rubrics (or evaluative criteria) have been developed for assessing student learning for a given outcome, please enclose a copy of the rubric/qualitative criteria.

D. What process will be used to analyze/interpret the assessment data for this course?

1. Who will participate?

A faculty member will compile the data. The results will be reviewed by the Undergraduate Committee.

2. How will recommendations be communicated?

Recommendations will be communicated from the discussion with the whole faculty, or among those who teach this course.

3. When will interpretation and recommendations take place?

The goal will be to make recommended changes the following term.

E. How will results of assessment in this course be used for improvement?

1. Describe the process for consideration of the implications of assessment for change:

a. to assessment mechanisms themselves,

b. to course design, and/or

c. to pedagogy

...in the interest of improving student learning.

Review of the quantitative data associated with the SLOs will be made. If the data indicate unsatisfactory achievement, this will require an evaluation of the assessment mechanism, the measure of assessment (questions asked, rubric), and potentially the pedagogy in teaching the content that was assessed. If many of the SLOs meet with unsatisfactory achievement (<70%), is this an indication of a need for a change in the course design to improve achievement?

2. Who participates in this discussion/decision making.

Primarily the Coordinator of the labs with input from the Teaching Assistants, along with input from discussion of the undergraduate committee and whole faculty.

3. How will recommendations be communicated?

Recommendations will be communicated from the discussion with the whole faculty.

4. When will this discussion/decision making take place?

Once discussed with the whole faculty, decisions will be finalized by undergraduate committee and approved by the faculty.