

General Education Annual Course Assessment Form

Course Number/Title: METR10/Weather & Climate

GE Area: B1

Results Reported for: AY 15-16

of sections: 5

of instructors: 4

Course Coordinator: Alison Bridger (as department chair)

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Department Chair: Alison Bridger

College: Science

Instructions: Each year, the department will prepare a brief (two page maximum) report that documents the assessment of the course during the year. The report will be electronically submitted by the department chair to the Office of Undergraduate Studies, with an electronic copy to the home college by October 1 of the following academic year.

Part 1

To be completed by the course coordinator:

- (1) What SLO(s) were assessed for the course during the AY?

SLO#3: Students should be able to use the methods of science, in which quantitative, analytical reasoning techniques are used.

- (2) What were the results of the assessment? What were the lessons learned from the assessment?

The department philosophy, instituted at a faculty retreat in January 2012, is to hold an "assessment week", during which all GE classes would be assessed. In AY 2014-2015, this week was April 6-10.

The faculty prepared a series of questions to assess SLO#3 in the core GE class MET-10. In all, the students were asked to provide eight answers. First the students were given the following preface to the questions:

This assessment refers to the map on the last page. Shown on the map are: (i) warm/cold /stationary fronts; (ii) contours of surface pressure (isobars, light solid lines); and (iii) a variety of weather observations at individual locations. In some states (e.g., Montana) there are few observations, while in others there are several (e.g., Texas). The figure on the next page will help you analyze and interpret the map.

Note: Each student got a copy of a weather map, which is an example of the way observations of present weather are shown. Maps like this will have been discussed in class.

Students were then asked eight questions involving identification of weather elements from the map. Examples of questions included: (1) Find the location (in the USA only – not Canada) where air temperatures are **coldest**: record the air temperature at this site and name the state where this cold reading is located; (2) Find the location (USA only – not Canada) where air temperatures are **warmest**: record the air temperature at this site and name the state where

this warm reading is located; (3) Find some locations (USA only – not Canada) where the dew point temperatures are **60°F or higher**, and name the locations (states, towns) etc.

Student answers were scored and scores are shown in the table below.

Table showing number of **correct** student responses (N)

Section ↓	# correct responses (max=8)	8	7	6	5	4	3	2	1	0
On-line	21	2	0	1	2	4	1	3	1	7
A	31	1	3	2	1	5	6	8	3	2
B	27	0	0	1	4	6	6	2	6	2
C	48	1	4	2	7	7	2	11	1	13
D	19	1	0	1	3	3	5	4	1	1
Total	146	5	7	7	17	25	20	28	12	25
	Fraction of total group	3%	8%	13%	25%	42%	55%	75%	83%	100%

First, the assessment exercise was successful in that good data were recovered. Second, the data clearly shows (see table) that the students did not do as well as we would have hoped/expected. For example, only 13% of students scored 6/8 or better. The clear majority of students (N=73) scored in the range 2-4 correct, a 50% correct score at best. Why such a poor performance?

There are a few obvious reasons:

- a. The lettering and symbols on the map students were given were small. Although a trained eye could distinguish the symbols, some who are not used to looking at weather maps may have trouble. This is a question of the quality of the printer, and whether or not we use color on the printed maps (color definitely helps, but is expensive. It also discriminates against color-blind students).
- b. The answers to some questions depended on getting the correct answer on the previous question.
- c. Some students, knowing that it was an assessment activity that would not count towards their grade, did not take the activity seriously (e.g. Antarctica as an answer to where on the maps the temperature is coldest = silly).
- d. All faculty cover this material in class. However, some will return to it almost every day in reviewing weather news, while other faculty might not ever show it again. This raises a question of “familiarity”.

The point of the assessment was to see if the students, examining a weather map, could distinguish between areas where it was colder, warmer, raining or snowing, etc. These are the typical questions that a weather forecaster is asked, and is taught in introductory weather courses nationwide. Because of the issues stated above, the assessment was not as effective as desired, and we believe it does not reflect on the quality of the instruction.

- (3) What modifications to the course, or its assessment activities or schedule, are planned for the upcoming year? (If no modifications, the course coordinator should indicate this.)
 - a. No modifications to the course are planned based on this assessment. When we first assessed SLO#3 using this method (3ya), the exercise was more successful.

Based on our results here, we may well re-visit this and decide to develop a new way of assessing SLO#3 in this class.

- b. A modified map, covering a smaller domain so that the symbols and letters are larger, should be used in a future assessment (unless we change to a new question).
 - c. The activity should carry some weight for the student grades so that the students take the assessment seriously.
- (4) Are all sections of the course still aligned with the area Goals, Student Learning Objectives (SLOs), Content, Support, and Assessment? If they are not, what actions are planned.
- a. We believe that the course continues to meet the area Goals, Student Learning Objectives (SLOs), Content, Support, and Assessment.