Assessment: Course Four Column

Spring/Summer 2018
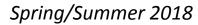
El Camino: Course SLOs (NSC) - Astronomy

ECC: ASTR 25:Stars and Galaxies

Course SLOs	Assessment Method Description	Results	Actions
SLO #1 Scientific Method - Students will be able to recognize the elements of the Scientific Method in the discussion of a scientific problem. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2013-14 (Spring 2014), 2017-18 (Spring 2018) **Input Date:** 11/12/2013	**Essay/Written Assignment -** The student will be given a popular science article about an observation or experiment. The student will identify the researchers' hypotheses, theoretical predictions, observations or experiments, and conclusions. **Standard and Target for Success:** Rubric: 1 point for correctly identifying the hypotheses 1 point " " " the prediction to be tested 1 point " " " the experimental result or observation 1 point " " " a reasonable conclusion based on the results 4 points: Excellent 3 points: Good 2 points: Fair 1 point: Poor Target: 75% or more score 3 or 4.	**Semester and Year Assessment Conducted:** 2013-14 (Spring 2014) **Standard Met? :** Standard Not Met Instructor A 4 pts 32% 3 pts 28% 2 pts 36% 1 pt 4% Instructor B 4 pts 19% 3 pts 26 % 2 pts 42% 1 pt 12% This is the first time this assessment has been done. It is similar to assessments given in other science departments, but the results turned out be be unhelpful. Most students simply copied sentences from the article, si it was unclear whether they really understood the idea of the scientific method. One instructor observed that it was more a test of reading comprehension. Unfortunately, the topic was rather technical and hard to	**Action:** Develop and administer a new assessment instrument similar to that used in Astro 20. (09/01/2015) **Action Category:** SLO/PLO Assessment Process

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		understand, although interesting and important. Later it turned out that the conclusions drawn in the study reported in the article have not been confirmed by other researchers, so the topic is highly controversial. That might be the take-off point for a good discussion of the scientific method if it weren't so technically obscure. (09/17/2014) **Faculty Assessment Leader:** S. Vincent Lloyd **Faculty Contributing to Assessment:** S. Kadakia	
	Essay/Written Assignment - The student will be given a science article about a scientific problem. The student will identify the researchers' hypotheses, theoretical predictions, observations or experiments, and conclusions. **Standard and Target for Success:** Rubric: 1 point for correctly identifying the hypotheses 1 point " " " the prediction to be tested 1 point " " " the experimental result or observation 1 point " " " being able to explain the difference between a hypothesis and an observation. 4 points: Excellent 3.5/3 points: Good 2.5/2 points: Fair 1.5/1 point: Poor Target: 75% or more score 3 or 4 **Related Documents:** slo_astro25_scientific_method.pdf	**Semester and Year Assessment Conducted:** 2017-18 (Spring 2018) **Standard Met? :** Standard Not Met The assessment included a total of 59 students under one instructor. 4 pts - 15% (9 students) 3.5/3 pts - 41% (24 students) 2.5/2 pts - 29% (17 students) 1.5/1 pt - 10% (6 students) 0.5/0 pts - 5% (3 students) A total of 56% scored a 3 or above, which means we did not meet the standard. The SLO assessment article was new. It was clear and direct. Students were able to understand what the article was about and most were able to identify the hypotheses and predictions. However, a good amount of them failed to identify the observations. They seem to mistake the observations with results or conclusions. A question on what the difference between a hypothesis and an observation was asked. Students' answers were very shallow which made it unclear if they fully understand what the two are and how they are used/addressed in a scientific article. In future SLOs, the question could be asked differently. (09/14/2018) **Faculty Assessment Leader:** S. Kadakia	**Action:** Ask students to define hypothesis/ prediction/ observation and give an example for each. (09/14/2019) **Action Category:** Teaching Strategies