Assessment: Course Four Column

SPRING/SUMMER 2015

El Camino: Course SLOs (NSC) - Astronomy

ECC: ASTR 12:Astronomy Laboratory

No data found for the selected criteria.

ECC: ASTR 25:Stars and Galaxies

Course SLO	*Assessment Method Description*	*Assessment Data & Analysis*	*Actions*
SLO #3 Universe Origin - Students will be able to describe the modern theory of the origin of the universe (the Big Bang Theory) and discuss the evidence that supports the theory. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2014-15 (Spring 2015) **Input Date:** 11/12/2013	**Essay/Written Assignment -** Assessment In a short essay, describe the Big Bang Theory. Discuss the major observations that are explained by the theory. Rubric 4 points: The student's explanation includes a description of the origin of the Universe in a hot, dense state and the formation of matter from pair production. The student shows understanding of the evidence for the Big Bang from the cosmic abundance of helium, the evolutionary changes in galaxies, and the Cosmic Microwave Background. 3 points: The Big Bang is well-described. One piece of evidence is well-explained. 2 points. The Big Bang Theory is fairly well described, but no supporting evidence is mentioned. 1 point. The student shows some understanding that the Universe began in a hot, dense state. No supporting evidence is presented. **Standard and Target for Success:** It is expected that 70% or more of students will score 3 or 4 on this SLO. **Related Documents:** BigBang.Spr2015.A25.pdf	**Semester and Year Assessment Conducted:** 2014-15 (Spring 2015) **Standard Met? :** Standard Not Met Instructor A. Pts number % 4 4 16% 3 13 52% 2 5 20% 1 2 8% 0 1 4% Instructor B. 4 4 7% 3 11 20% 2 18 33% 1 18 33% 0 3 6 Instructor B analyzed one section's results in more detail to check comprehension of the evidence in favor of the Big Bang Theory. The results are as follows: Hubble's Law 4 Helium-4 production 9 Quasars 7 CMB 10 Total students 32 Analysis Comparing Instructor A with Instructor B, Instructor A's students did considerably better on this assessment; in fact they came very close to meeting our goal (68%, just shy of 70%). It's hard to say what this means. Perhaps Instructor B	**null.courseAction:** Revise the assignment to elicit a fuller response. (05/01/2016) **Action Category:** SLO/PLO Assessment Process

Course SLO	Assessment Method Description	Assessment Data & Analysis	Actions
		simply grades harder. Perhaps the results are affected by the method of giving the assessment. Instructor A gave it as a quiz, whereas Instructor B gave it as a homework assignment. Perhaps it reflects the timing of the assessment; Instructor B gave it several weeks after the students studied the Big Bang Theory in class. Instructor B noticed that many students seemed to have taken their answers from the Wikipedia article "Big Bang"; indeed, a few copied it word for word. Having said all that, overall, most students came away with an understanding that the Universe began in a hot dense state and has been expanding ever since, a major part of this Student Learning Objective. They are not so clear on the evidence in favor of the Big Bang. An astronomy major would be expected to name at least three of the observations that support the Big Bang theory; but it could be argued that all a general education student needs to know is that there are several independent lines of evidence and to be able to name one or two. To this extent, the students met their objective. We think the assigment can be re-worded to bring out a fuller response from the students. We also recommend presenting the assignment uniformly as an exam question. (09/11/2015) **Faculty Assessment Leader:** S. V Lloyd **Faculty Contributing to Assessment:** A. Said **Reviewer's Comments:**	