

COURSE SLO ASSESSMENT REPORT, SCC

Department: Physics Course: 237

Year: 2012 Semester: Spring

1) Outcome to be assessed	2) Means of assessment and criteria of success	3) Summary of data collected	4) Analysis of data	5) Plan of action/what to do next
<p>Systematically analyze problems involving wave phenomena by applying one or more problem solving techniques including calculus and various wave equations.</p>	<p>Each of the free response problems was rescored using a rubric from 1 to 5. A single problem may have multiple concepts that were being evaluated. An area of success for the class would be at least 70% of students being successful and a successful student will have accumulated at least 70% of the assessment points possible.</p>	<p>There were 24 of 26 students that attempted the final exam. 7 of the 24 students that attempted the final exam were at the level of success. An additional 8 students were able to earn between 65 and 69 % of the assessment points. Diffraction and Schrodinger's equation were the two least successful topics and thermodynamics was the most successful.</p>	<p>The results were not what were hoped for at the beginning of the semester. Student focus seemed to dwindle after receiving their acceptance notices for transfer. Unfortunately, this was as the material became the most difficult. During the early part of the semester, 4 of six topics assessed were successful but none of the final three were with quantum probability being the closest to the level of success.</p>	<p>Based on the increased success that DLAs have brought to Physics 227, creation of DLAs in wave optics, relativity, and quantum mechanics might be helpful in improving student performance on these difficult topics. It would be interesting to see how the results of the assessment might differ if the course was offered in the fall term when students would not be getting ready to transfer. There is still not enough assessment data for this course to make any definitive conclusions. This SLO will be assessed again in Spring 2013.</p>

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<p>Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.</p>	<p>An individual assessment activity was given to students covering several of the measurements, apparatuses, and calculations that they were asked to do during the semester. Each portion of the assessment was worth 1 point and a student could earn 0, 0.5, or 1 point for it. A total of 10 points were possible with a student needing a score of 7 or greater to be successful.</p>	<p>All of the 26 enrolled students attempted this assessment and 13 of the 26 reached the level of success. No student scored lower than 4.5 points on the activity with the average score around 6.5.</p>	<p>The results on this new assessment were similar (slightly better) than on last year's activity but the results indicate a greater breadth of knowledge than the previous version. Students struggled with some of their calculations and there was some confusion with some of the instructions. It is unclear whether the issue with the instructions was real or simply typical student complaints.</p>	<p>Enough time may not have been given to properly complete this activity. There were many students that seemed to be on the right track but were not able to complete everything in the time allotted. This same assessment will be given during the Spring but additional time will be provided to see if there is any change in the results. Additionally, the instructions for each section will be revised to try and improve clarity.</p>