

COURSE SLO ASSESSMENT REPORT, SCCDepartment: **Physics** Course: **Physics 250A**Year: **2012** Semester: **Fall**

SLO #1: Lab Techniques

| 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 |
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| <i>Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.</i> | Students are required to turn in a written lab report with each experiment. Nine lab reports were assigned to twenty-one students. | 95% of the students were able to turn in at least one lab report that was complete—no errors—during the semester. 71% of the students were able to turn in lab reports with minimal errors consistently throughout the semester. | The fact that almost all of the students were able to turn in a lab report without errors indicates that the students understand what is expected of them in a lab report. The fact that students are not consistent with their lab reports indicates a lack of diligence. | A grading rubric was added to the lab manual this past semester. The rubric and corresponding instructions given to the students seemed to help make clear what is expected from students in the lab portion of the class. The rubric was new this semester, on reflection of the lab report grades, the plan is to emphasize to the students the importance of being thorough on each assignment. |

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SLO #2: Problem Solving

| 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 |
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| <p><i>Students who successfully complete this course and its requirements will be able to systematically analyze mechanical systems by applying one or more problem solving techniques including calculus, conservation laws, kinematics, and Newton's laws.</i></p> | <p>Eight questions were embedded in a multiple choice exam consisting of forty multiple choice questions.</p> | <p>When comparing all students, the following percentage reflect the percentage of students answering the questions correctly: Calculus – 90% Kinematics – 59% Conservation Laws – 76% Newton's Laws – 62%</p> <p>When comparing the upper 27% of the test takers, the following are the percentages answered correctly: Calculus – 100% Kinematics – 79% Conservation Laws – 100% Newton's Laws – 100%</p> <p>When comparing the lower 27% of the test takers, the following are the percentages answered correctly: Calculus – 81% Kinematics – 26% Conservation Laws – 50% Newton's Laws – 21.43%</p> | <p>When students were given a large number of problems that required a different problem solving technique for each problem, were the students able to identify which technique to apply and answer the question correctly?</p> <p>The results of the upper 27% of the test takers, indicates that students who do well on the exam, have mastered the SLOs.</p> <p>Kinematics had the lowest turnout of the four categories mentioned (79%). Further analysis showed that students did better when applying kinematics to one dimension motion (90%) than projectile motion (57%) or relative velocity in two dimensions (28%).</p> | <p>The average homework grade was 89% and the average quiz score was 88%. This indicates that students are doing their work and understanding the material as we go along; however, in general, the students have difficulty synthesizes a large body of material at the end of the semester.</p> <p>My plan is to try to incorporate more cumulative practice. Instead of finishing a topic and moving on to the next topic, I need to incorporate a sample of problems from previous sections on a regular basis.</p> |