Program Level Outcome (PLO) Assessment Report Summary

Program Level Outcomes for Physics:

Upon successful completion of the Physics program, a student should be able to:

1. comprehend and articulate basic physics terminology.
2. demonstrate proficiency in problem solving, especially with regard to basic physics problems involving major concepts, theories, and principles including, but not limited to:
   - conservation of momentum and energy.
   - Newtonian mechanics.
   - Maxwell's laws.
   - fluid dynamics.
3. collect and analyze data effectively using basic laboratory equipment and present results in formally structured laboratory reports.

What we looked at:

We looked at PLO 3 because it aligns with both Physics AS Programs and AST Program.

We looked at SLO #2 for Physics 4A: Given appropriate direction, the student will be able to set up laboratory equipment safely and efficiently, plan and carry out experimental procedures, identify possible sources of error, implement techniques that enhance precision, reduce and interpret data by hand and/or using computers and report verbally and in written language the experimental data, results and conclusions.

We looked at SLO #3 for Physics 4B: Given appropriate direction, the student will be able to set up simple electrical circuits safely, use meters, oscilloscopes and other basic electrical equipment to perform measurements on these circuits, perform calculations based on data collected from these measurements and draw meaningful conclusions from these calculations.

What we found:

We found that we need to focus on having the students implement significant figures and a more detailed discussion on sources of error in their laboratory reports. We also agreed on using the same rubric for evaluating the course SLOs to have consistency and also because the rubric is very detailed and appropriate.

What our next steps are:

The next step is to teach significant figures and sources of error during the first lab meeting of Physics 4A, beginning with the Spring 2014 class. For the following labs, sig figs and sources of error will be part of the lab report grade. Continue to collect all labs, focus on one lab report and evaluate it with a more detailed rubric. Also, include 16 photogates in next year's budget in order to cover Conservation of Energy.