DeAnza College **SLO ARCHIVE**

Student Learning Outcomes for PHYS 2A

General Introductory Physics

Team Members:

Team Leader:
Eduardo Luna () in PHYS

Other members:

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Additional team members/notes about team:

Ronald Francis

Additional Notes:

Outcomes:

Outcome 1 Phase I: Statement

Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics

Outcome 1 Phase II: Assessment Strategy Used:

Assessment Quarter: Winter 2011
Assessors: Eduardo Luna
Assessment Tools: *No tools assigned*.
Sections being assessed: 01, 02

Outcome 1 Phase III: Reflect & Enhance

Number of people involved in Phase III: 1

Changes:

Methods:
As assessment tools we used selective new un-encountered problems on the lecture final. Assessment was then based on the scores obtained on these selective problems on an

individual and overall class basis. The following problem on the lecture final was used as an assessment:A bead slides without friction around a loop-the-loop. The bead is released from rest from a height H. (10 pts)a) What is the minimum height H so that the bead reaches a given point?b) Using the value of H from part (a) find the speed of the bead at point a different point. c) Determine the normal force exerted on bead at a given point.

Findings and Conclusions:
a) About 65% of the class was able to solve the problem correctly, 20% partially got it correct, and 15% did not know how to solve it. b) About 15% of the class needed to improve their analytical and problem solving skills.c)65% success was acceptable for the class, but not outstanding.d)Areas for improvement would be to further help students develop their analytical and problem solving skills using the principles/laws/theories of classical mechanics.e) Based on previous performances for such a class, the results are reasonably acceptable.

Enhancement (Planned Actions)
Part I:
The assessment results suggested areas of student learning improvement. In order to improve student learning and success, the instructor should address the SLOs and the assessment results in an effective pedagogical approach.

Part II:
Supplementing our teaching methods with computer-based technology and traditional physics demonstrations would be ideal to help students understand physics principles from a conceptual and practical viewpoint.

Outcome 2 Phase I: Statement

Gain confidence in taking precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.

Outcome 2 Phase II: Assessment Strategy Used:

Assessment Quarter: Winter 2011
Assessors: Eduardo Luna
Assessment Tools: •
Sections being assessed: 01, 02

Outcome 2 Phase III: Reflect & Enhance

Number of people involved in Phase III: 1

Changes:

Methods:
Proper knowledge of the Scientific Lab Report as accessed in the lab final including; scientific measurements with uncertainties, error analysis, calculations, and hands-on experience with the experimental method. The following problem was used as an

assessment on error analysis in the lab:Given the metal block provided, using the proper measuring instrument, measure the dimensions and the mass with uncertainty and then calculate the density and uncertainty.

Findings and Conclusions:
a) About 80% of the class was able to solve the problem correctly, 10% partially got it correct, and 10% did not know how to solve it.b) 80% success was acceptable for the class and thus there weren't any apparent student needs and issues revealed.c)80% success on error analysis was acceptable for the class, but not outstanding.d)Area for improvement would be to further help students develop a conceptual and practical understanding of the physics principles in the lab. e)Based on previous performances for such a class, the results are reasonably acceptable.

Enhancement (Planned Actions)
Part I:
The assessment results suggested areas of student learning improvement. In order to improve student learning and success, the instructor should address the SLOs and the assessment results in an effective pedagogical approach.

Part II:
Supplementing our teaching methods with computer-based technology and traditional physics demonstrations would be ideal to help students understand physics principles from a conceptual and practical viewpoint.

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