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## Student Learning Outcomes for PHYS 10

*Concepts of Physics*

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### Team Members:

**Team Leader:**

[Eduardo Luna](#) () in PHYS

**Other members:**

1. [David Newton](#) (x8668) PHYS

**Additional team members/notes about team:**

Ronald Francis, David Newton,

**Additional Notes:**

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### 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 physics in general.

**Outcome 1 Phase II: Assessment Strategy Used:**

Assessment Quarter: Winter 2011

Assessors: David Newton

Assessment Tools: *No tools assigned.*

Sections being assessed: 01

**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: When a person holds a gun so that the gun never accelerates and then fires the gun such that the gun still does not accelerate, the force of the gun on the bullet (via the expanding gases in the barrel of the gun ...) a) is equal to the force of the gun on the person's hand. b) is equal to the force of the bullet on the object the bullet hits after the bullet leaves the gun. c) is equal to the force of the bullet back on the gun. d) a and c e) a and b and c

**Findings and Conclusions:**

a) 60% of the class was able to solve the problem correctly, 20% did acceptably well, and 20% just got it wrong. b) 20% of the class needed to improve their analytical/conceptual problem solving skills. c) 80% success was acceptable for the class. d) Areas for improvement would be to further help students develop their analytical and conceptual understanding of the principles of physics. e) The results are typical in this type of class and 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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