

Physics and Engineering PLO 1: Fundamental Principles

Program learning outcome 1: Students will develop an understanding of the fundamental principles of physics.

Measure: Major Field Achievement Test in Physics. This test was administered in PHY362 this year. (in subsequent years this will be given in PHY475).

Criteria for success: At least 50% of students will score more than the 40th percentile on the MFAT in Physics

Observations: Our goal was met this year with 5 out of 7 (71%) earning at the 40th percentile or better. In this transition year before our capstone class (PHY495) is established, we had students graduating spring 2011 or winter of 2012 take the exam who were enrolled in an upper division class which resulted in two of our seniors not take the exam (these two students were our first two students starting the mechanics emphasis, and were not required to take this class.) If these students took the exam and failed to reach the 40th percentile, than just over 50% of our graduates would have would have scored at this level.

Longitudinal Data:

	2006-07	2007-08	2008-09*	2011-12
Number of Students	5	6	9	7
Percent above the 40th percentile	80%	57%	56%	71%
Score Average	160±25	147±10	141±9	148±13
Lower Division	58±26	48±13	41±11	50±15
Upper Division	60±20	46±13	42±10	44±10

*Data was not collected during the 2009-10 or 2010-11 academic years.

Additional comments: In the future at least one additional indirect method of assessment would be useful. Additionally we may want to evaluate whether the criteria of success is appropriate (perhaps setting different criteria for the two programs, or including additional data such as the breakdown of material provided by the MFAT, or the department average as a whole.) There is a tendency for averages to be changed significantly by a few individuals, so these averages should be perhaps viewed cautiously.