

Summary of 2012-2013 Annual Progress Report

- **SLO 1:** Students will demonstrate ability to apply foundational knowledge to the solution of problems in physics. [**K-State SLO:** *Knowledge, Critical Thinking*]

An assessment instrument is being developed that is designed to specifically assess student's (who have, within the previous academic year, completed Engineering Physics I & II) ability to solve level appropriate, classical problems in introductory physics. This instrument is being designed to be able to be administered via KSOL and can be tabulated each year in a consistent manner.

Students who have declared physics as a major and who are now progressing into the physics curriculum beyond the introductory (Engineering Physics I & II) classes will be assessed.

- **SLO 2:** Students will demonstrate skill in collecting, recording and analyzing data

Assessment Instrument: PHYS 325 (Relativity & Quantum Physics) Average Lab Score			
Academic Year	# of Students	% Proficient	% Exemplary
2010-2011	26	88% (23)	77% (20)
2011-2012	26	92% (24)	62% (16)
2012-2013	28	100% (28)	100% (28)

2012-2013 Summary: Students in PHYS 325 are overwhelmingly meeting proficient and exemplary standards. However, the department recognizes that this particular assessment instrument is not as objective as we'd like. The department is discussing alternative assessment instruments with the hopes of developing something that can be more reliable and consistent.

- **SLO 3** Students will demonstrate the ability to effectively communicate information, scientific or otherwise in both written and verbal form

PHYS 506 (Advanced Physics Lab): Written Lab Scores			
Academic Year	# of Students	% Proficient	% Exemplary
2010-2011	10	100% (10)	50% (5)
2011-2012	15	93% (14)	67% (10)
2012-2013	18	100% (18)	94% (17)

2012-2013 Summary: Written lab scores in PHYS 506 continue to indicate that our students are learning to write well (scientifically).

PHYS 636 (Physical Measurement and Instrumentation): Capstone Project Scores			
Academic Year	# of Students	% Proficient	% Exemplary
2010-2011	3	100% (3)	0% (0)
2011-2012	7	100% (7)	43% (3)
2012-2013	n/a	n/a	n/a

2012-2013 Summary: This instrument was not used for assessment purposes for this cycle.

- **SLO 4** Students will demonstrate the ability to apply knowledge of physics at the advanced undergraduate level

* PHYS 522 (Mechanics): Final Exam Scores			
Academic Year	# of Students	% Proficient	% Exemplary
2011-2012	16	75% (12)	13% (2)
2012-2013	19	79% (15)	47% (9)

* PHYS 532 (Electromagnetic Fields I): Final Exam Scores			
Academic Year	# of Students	% Proficient	% Exemplary
2011-2012	13	46% (6)	0% (0)
2012-2013	12	67% (8)	25% (3)

* PHYS 662 (Intro to Quantum Mechanics): Final Exam Scores			
Academic Year	# of Students	% Proficient	% Exemplary
2011-2012	14	43% (6)	14% (2)
2012-2013	12	91% (11)	36% (4)

2012-2013 Summary: The majority of our students meet proficiency for these assessment instruments. The number of proficient and exemplary students is expected and closely match traditional grade distributions in these upper level courses.

The outcome of the PHYS 662 instrument is very encouraging. PHYS 662 is a challenging course with students typically struggling to do well. Significant effort was put into the pedagogical approach to this course with obvious success.