Physics Ph.D. Program

Student learning outcomes (SLO's)

i) Achieve a broad understanding of physics at the graduate level
ii) Demonstrate progress in the selected research project
iii) Bring to a conclusion original research that can be disseminated to the physics community.

Alignment matrix for each SLO

	University-wide SLOs (Graduate Programs)			Program SLO is conceptually different from university SLOs
Program SLOs	Knowledge	Skills	Attitudes and Professional Conduct	
1. Achieve a broad understanding of physics at the graduate level	x	x		
2. Demonstrate progress in the selected research project	x	x		
3. Bring to a conclusion original research that can be disseminated to the physics community.	x	x	x	

Summary of student learning since 2004.

We recruit students with a range of abilities and backgrounds to our Ph.D. program and so there is a range of level of student preparedness as they enter KSU. This preparedness ranges from UG's with a US liberal arts education to MS students from other countries who have taken intensive BS and MS physics focused degrees. We continue to place emphasis on recruitment of domestic students and especially students from Kansas. We do not expect all of this subset of students to enter the core courses immediately (a group of seven graduate physics courses required of Ph.D. students). The student learning for this group shows no difference to international students who often enter with an M.S. indicating we continue to do a good job of placing our students correctly in classes.

An important part of research dissemination is communication. Our results (TA evaluations performs by UG students) tell us that despite the fact that > 50% of our students are not from USA, their communication skills are comparable to other TA's across KSU.

We have recently begun a discussion of the student learning in our core courses. So far our curriculum committee has reviewed the core courses and the faculty have had one meeting to discuss changes that might improve student learning. We expect that discussions will continue in several faculty meetings in Fall 2009 before a final decision is made on possible changes to improve student learning.

Physics M.S. Program

Student learning outcomes (SLO's)

i) Achieve a basic understanding of physics at the graduate level
ii) Demonstrate progress in the selected research project
iii) Bring to a conclusion original research that can be disseminated to the physics community.

Alignment matrix for each SLO

Program SLOs	University-wide SLOs (Graduate Programs)			Program SLO is conceptually different from university SLOs
	Knowledge	Skills	Attitudes and Professional Conduct	
1. Achieve a basic understanding of physics at the graduate level	x	x		
2. Demonstrate progress in the selected research project	x	x		
3. Bring to a conclusion original research that can be disseminated to the physics community.	x	x	x	

Summary of student learning since 2004.

Generally M.S. students are placed at the correct level and succeed in our classes as indicated by the average GPA. Poor math methods preparation was previously identified as a problem for some incoming domestic graduate students (but not for non-domestic graduate students).

A new course, Electricity and Magnetism 2, which requires students to use advanced math skills in the context of physics was recommended by the physics department curriculum committee. This course was created and fills this gap in student knowledge.