

**Revised Template
Degree Program
Assessment of Student Learning Plan
Kansas State University**

APR 13 2005

BY:.....

Check the box if your program's student learning outcomes have been modified since November 2003. If so, please email (apr@ksu.edu) or attach a hard copy to this document.

A. College, Department, and Date

College: *Arts and Sciences*
Department: *physics*
Date: *Oct 12, 2004*

B. Contact Person(s) for the Assessment Plans

Professor Michael O'Shea
Professor Tim Bolton

C. Degree Program

M.S. in Physics

D. Assessment of Student Learning Three-Year Plan

1. Student Learning Outcome(s)

[Insert at least 2-5 learning outcomes that will be assessed by the unit over the next three years. Each unit will select which of its learning outcomes to assess. The number of learning outcomes to be addressed is decided by the unit in collaboration with its college, accrediting agencies, professional organizations, and industry.]

This is a complete list of our Student Learning Outcomes

- 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.**

Special rationale for selecting these learning outcomes (optional):

[If applicable, provide a brief rationale for the learning outcomes that were selected]

Relationship to K-State Student Learning Outcomes (insert the program SLOs and check all that apply):

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	
4.				
5.				

2. How will the learning outcomes be assessed? What groups will be included in the assessment?

[Briefly describe the assessment tools, measures, or forms of evidence that will be utilized to demonstrate students' accomplishment of the learning outcomes selected in the three-year plan. There is an expectation that half of the assessment methods/measures will be direct measures of student learning (see handout for examples of direct and indirect measures). Also indicate whether the measure is direct or indirect. If you are unsure, then write "Unsure of measurement type"]

Achieve a basic understanding of physics at the graduate level

GPA – The graduate student will maintain a grade point average (GPA) of 3.0 with the expectation that they will obtain either an A or a B in courses directly related to their research. Examples of possible course are Phys620 Teaching University Physics, Phys 651 Introduction to Optics, Phys 691 Introduction to Astrophysics, Phys694 Particle Physics, Phys707 Applied Quantum Mechanics, Phys655 Physics of Solids.[direct measure].

General review -Physics faculty will meet as a large group to review the progress of graduate students. Discussion will include student GPA. [indirect measure]

Demonstrate progress in the selected research project

Seminar – The graduate student will give a public seminar on their research. The student will present background on their M.S. project, report their progress to date and discuss any problems they are currently encountering. During and after the seminar the student will be asked questions by the audience of physics faculty, graduate students and any other interested audience members.[indirect]

General review -Physics faculty will meet as a large group to review the progress of graduate students. Discussion will include the above assessment. [indirect measure]

Bring to a conclusion original research that can be disseminated to the physics community.

Final M.S. oral exam – The graduate student will take a final oral exam administered by their supervisory committee in which the student presents their final results on their research project. An important part of this is assessing the scientific merit the originality of the work so that it may eventually be published, usually in a short paper.

This will be assessed and graded either pass or fail by a vote of the majority of the members of the students supervisory committee [direct measure].

3. When will these outcomes be assessed? When and in what format will the results of the assessment be discussed?

[Briefly describe the timeframe for how your unit will spread out the assessment of the learning outcomes selected for the three-year plan. For example, provide a layout of the semesters or years (e.g., year 1, year 2, and year 3), list which outcomes will be assessed, and which semester/year the results will be discussed (e.g., discussed with faculty, advisory boards, students, etc.)]

Achieve a basic understanding of physics at the graduate level

GPA - Courses at the introductory graduate level (examples are Phys620 Teaching University Physics, Phys 651 Introduction to Optics, Phys 691 Introduction to Astrophysics, Phys694 Particle Physics, Phys707 Applied Quantum Mechanics, Phys655 Physics of Solids) are offered once a year and will be evaluated via the grade awarded to the student.

General review – occurs in a faculty meeting in each (fall and the spring) semester.

The process by which this SLO is evaluated (through course offerings, departmental exams, and a faculty meeting) will be discussed in a faculty meeting in Fall of 2005.

Demonstrate progress in the selected research project

Seminar – The graduate student will give a public seminar once a year. The student will receive feedback and suggestions during and after the seminar from faculty.

Evaluation of this will also occur in a faculty meeting each semester in which students are reviewed to determine if they are making satisfactory progress.

The process by which this SLO is evaluated (through a public seminar) will be discussed in a faculty meeting in Fall of 2006.

Bring to a conclusion original research that can be disseminated to the physics community.

Final oral exam - The graduate student will take a final oral M.S. exam in which they give a presentation and then discuss their results with their supervisory committee. This will occur once the student's research has been completed and they have written a thesis. While students have often published some of their work prior to their defense, this is not a requirement since publication times can be up to a year from the time of submission.

For most students this will be approximately 2 years after they enter the M.S. program.

The process by which this SLO is evaluated (structure/format of final M.S. defense) will be discussed in a faculty meeting in Fall of 2007.

4. What is the unit's process for using assessment results to improve student learning?

[Briefly describe your process for using assessment data to improve student learning.]

Achieve a basic understanding of physics at the graduate level

If any areas requiring improvement are identified then a request to consider improvements is forwarded to either the Graduate Affairs committee or the Curriculum committee within the physics department. These committees then consider possible changes to improve student learning. These suggested changes are then brought back to the faculty for a final decision. In the past these have taken the form of changes in course syllabi, creation of new courses and cancellation of old courses.

Demonstrate progress in the selected research project

If any areas requiring improvement are identified concerning the format or other aspects of the yearly seminar given by graduate students, then modifications are forwarded to either the Graduate Affairs committee or the Curriculum committee within the physics department. These committees then consider possible changes to improve student learning.

Bring to a conclusion original research that can be disseminated to the physics community.

If any areas requiring improvement are identified concerning the format or other aspects of the final M.S. oral exam, then modifications are forwarded to the Graduate Affairs committee within the physics department. This committee then considers possible changes to improve student learning.

Suggestions that require modification to graduate school rules are forwarded to the Graduate Council via the Graduate School.