

Program Assessment Report (PAR) on Completed Assessment

Year 1 [2014/2015] ~ Program: Physics

1. Which set of PLOs was assessed this academic year (identify each PLO)?

Lab Work. The student will demonstrate good experimental technique, including the proper use of equipment, performance of experiment, and analysis of results. Furthermore the student will assess experimental uncertainty and make meaningful comparisons between experiment and theory and thereby more fully understand their observations of physical phenomena.

Courses and faculty: PHYS 448L DM PHYS 494 RAS

Written Communication. The student will demonstrate effective written communication skills through clear and concise problem solving, reports written to satisfy the requirements of a variety of laboratory courses and topics, and acceptable research papers.

Courses and faculty: PHYS 448L DM PHYS 494 RAS

Oral Communication. The student will demonstrate effective oral communication skills in oral presentations in courses, seminars, and at scientific meetings.

Courses and faculty: PHYS 352 DM PHYS 494 RAS

2. Describe the assessment activities below. Please provide enough detail to convey the nature of the activities.

PHYS 494: Direct assessment: research talk, lab activity, lab report, and final presentation. Course exit survey for indirect assessment.

PHYS 448L: Direct assessment:

Formal and informal lab writeups, student observation.

PHYS 352: Direct assessment; midterms, homeworks and final presentation on a project.

3. What were the results of the assessment activities?

PHYS 494:

Lab Work Direct Assessment:

80% of students fell in the top two categories. This SO is met. However, there were some significant trends toward less than good work. These results suggest that earlier introduction to research methods would be a significant improvement to this program. They also suggest a stronger focus on actually doing the research in this course and getting the background information earlier in their academic career. These results suggest a required thesis project for this program would be a good idea.

Indirect Assessment: Errors with indirect assessment instrument: Had planned to use the course evaluation's additional questions to obtain an indirect assessment of SOs, but inadvertently switched the Likert scale from the university's course/instructor evaluations (where a "1" was disagree strongly and a "5" was agree strongly, to the complete opposite scale on the additional questions – a "1" was agree strongly and a "5" was disagree strongly). This made the results suspect as some students did not read instructions and others did. This means a "1" may be either strongly disagree (if you did not read directions) or strongly agree (if you did read the directions). Oops. This has to be fixed in the future!

PHY 448L:

The student's previous struggles with the equipment have been addressed by a restructure of the course. Now it more directly supports the notorious content of the electromagnetics lecture.

PHY 352:

The student talks were mostly excellent. One was crap, the others were polished and useful. This part of the course is effective at meeting the learning outcome because the students are coached by the professor individually, over a draft of their talk, to give an excellent presentation.

4. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

The lab work overall in the program sucks. This will be addressed by making a change to the program outlined in our physics program report. We will have more an advanced lab course, an electronics lab course, and change the format of the senior research sequence, including requiring a senior thesis.

Also, see comments within answers to question 3.

5. Are there any new resources needed to make program improvements? If so, please include the resources and provide justification for each in the Budget section of the Annual Report.

*Submit to Ms. Rebecca Haggerty (Rebecca.haggerty@scranton.edu) with a notation in your Annual Report that "Program Assessment Report(s) (PAR) has been submitted under separate cover."