

## End of Year Assessment Report for Programs

Program: Physics

Academic Year: 2020-2021

Program Director: David Probst

Submission date:

Year in Operational Plan: Year 3 = Year 1. Assess POs 1, 2, and 3. Other POs were also assessed.

### Assessment Methods and Benchmarks

*Based upon your operational plan, what components of your program are assessed this year? For each program objective being assessed this year, report the data you have collected for Introductory, Developmental, and Mastery levels. Put this information in a chart. Refer back to Section D in your Operational Plan. Because this year has not been a particularly normal year, you may have adjusted your plans. Therefore, report on the data you have available.*

Program Objective	Introducing	Developing	Mastering
PO 1. Explain Physics Concepts	PHYS200 Exams	PHYS220 Part I of Midterm Exams	PHYS324 Part I of Midterm Exams
	Benchmark: >=75%	Benchmark: >=70%	Benchmark: >=70%
	Evidence: 100% met	Evidence: 50% met	Evidence: 50% met
PO 2. Comprehend Key Principles in Physics	PHYS200	PHYS311 Not Taught	PHYS324 Part 2 of Midterm Exams
	Benchmark: >=75%	Benchmark:	Benchmark: >=70%
	Evidence: 100% met	Evidence:	Evidence: 50% met
PO 3. Solve Problems	PHYS200 WebAssign Assignments	PHYS311 Not Taught	PHYS324 Section II of Final Exam
	Benchmark: >=75%	Benchmark:	Benchmark: >=70%
	Evidence: 100% met	Evidence:	Evidence: 100% met
PO4. Perform Experiments, Analyze Results, Communicate Findings	PHYS200 Lab Reports	PHYS220 Lab Reports	PHYS403 Not Taught
	Benchmark: >=75%	Benchmark: >=70%	Benchmark:
	Evidence: 100% met	Evidence: 100% met	Evidence:
PO5. Understand Contemporary Issues in Physics	PHYS210 Research Paper	PHYS220 Section I of Final Exam	PHYS324 Section I of Final. Exam
	Benchmark: >=75%	Benchmark: >=70%	Benchmark: >=70%
	Evidence: 67%	Evidence: 100% met	Evidence: 100% met
PO6. Appreciate God's Creation Consider one's Career Calling through Physics	ENGR101 C01, C02, C03, C05, C06	PHYS220	PHYS409 Not Taught
	Benchmark: >=75%	Benchmark: >=70%	Benchmark:
	Evid: 80%, 80%, 95%, 90%, 80%	Evidence: Not Assessed	Evidence:
PO7. OP now has only 6 POs. Former PO6 dropped and PO7 now PO6.			

\*The chart above is merely an example template. Please make sure to edit the chart to reflect your operational plan for the current year

## Analysis of Assessment Findings

*Discuss the significance of the findings of the current year in light of the desired results, findings from previous years, recent changes in the program or the assessment process, etc. What did you learn from the assessment? In particular:*

*(1) What strengths and weaknesses do the findings reveal about the program?*

*(2) What strengths and weaknesses do the findings reveal about the assessment process?*

*(3) What impact have program changes in recent years had on student learning (indicate those program changes that resulted from previous assessment findings)?*

*(4) What impact have recent changes in the assessment process had on the quality and usefulness of the findings? Of particular importance to note are recent changes and improvements in the program that resulted from previous assessment efforts.*

It is important to note that the largest number of Physics majors assessed for this report were three in PHYS200. The rest of the assessments (PHYS210, PHYS220, PHYS324) were done with two students, so the assessments reflect more about student ability than program strengths and weaknesses.

Most assessments were at or above the benchmark. Exceptions have been highlighted in yellow. Again, little can be inferred from these because of the small numbers. On PO5 at Introducing level, 12 of 18 students in the class met the benchmark, but the data does not show whether either of the two Physics majors were among those who did not meet the benchmark. For POs 1 and 3 at the Mastering level, there were two students in PHYS324, but only one was really interested in Quantum Mechanics. The other one was an international student who was an Engineering major, was planning to return home upon graduation that semester, and was only taking it because they needed one more technical elective to graduate. So, no real conclusion about the program can be drawn from these data.

The OP was updated and the old PO6 was dropped and the wording for a couple others was improved. Each PO is now assigned to be addressed in various courses at the three levels. Each PO is also designated to be assessed only once at each level throughout the curriculum even if it is addressed in other courses. We hope this will improve our processes.

## Sharing and Discussion of Assessment Findings

*Describe how assessment findings are typically shared and discussed among program faculty and other stakeholders. In particular, make clear the process for analyzing assessment findings and using them to make improvements in the program and/or the assessment process.*

Assessment results are discussed as needed at faculty meetings throughout the academic year, but the formal discussion for the End-of-Year Assessment Report occurs during May Convention.

## Use of Assessment Findings for Program Improvement (Action Plan)

*(A) Describe any changes in (1) the program and/or (2) the assessment process that are planned in response to the assessment findings from this academic year.*

*(B) Briefly summarize the status of the previous years' or semester's action plans. Are they complete, still being implemented, on hold, or some other status?*

*(C) For each intended improvement or change in the program stemming from this year's data, provide a detailed timeline for follow-up data collection, data analysis, and data review.*

*(D) Based on your CDL assessment exercise, describe how you will make programmatic changes to better prepare your students to demonstrate high levels of achievement on the UNIV 401 SLOs.*

*(E) Indicate your plans to make your program more experiential in the coming year?*

(A) No changes have been made to the program.

(E) The program is already very experiential. Most Physics courses have a lab component, they take a Chemistry course, and either a Biology course or a second Chemistry course with labs, and many participate in research. Students may also complete an internship, for credit or not, during one or more of their summers or work part time during the academic year in a technical position. No additional experiential learning is planned at present.

### **Supporting Documents**

*[If you attach any supporting documents, please list them here. You may submit these supporting documents into the D2L dropbox.]*

The FCARs from AY 20-21 were used in compiling the assessment data.