

Program Outcomes Revised 2017

Program Title: Physics

Program Team: Paul Jozik

Expected Learning Outcomes

1. Apply quantitative thinking process and reasoning skills in upper division academic work and/or workplace tasks.
2. Communicate physics concepts.
3. Use mathematical tools essential to success in upper division physics courses.
4. Solve problems collaboratively
6. Information literacy - use software to solve physics problems and interpret experimental data.

Assessment (How do students demonstrate achievement of this outcome?)

1. Transfer requirements for upper division courses were examined to ensure alignment.
2. Written lab reports for PHY203 and PHY204 graded with rubrics.

Validation (What methods are used to validate your assessment?)

Students have completed the CAAP Scientific Reasoning Exam which is a nationally normed exam. So long as the CAAP exam can be administered so that student performance can be included in the course grades, meaningful measure will result and the testing should be repeated every few years.

Results (What do the data show?)

Students from PHY202 and PHY204 completed CAAP Science exam. Students scored significantly higher than the national average.

Follow-up (How have you used the data to improve student learning?)

CAAP exams have indicated that the students exiting General Physics and Principles of Physics course sequences are performing well above the national average so the program needs to be maintained at a high level.

Lecture and Laboratory Exams are of a word problem nature (often multi part) that test the students at higher levels such as analysis, synthesis, and evaluation. That problem solving process prepares the students to operate at a higher level when they go on to upper division courses and work environments. That method of testing should be maintained even though it is considerable more time consuming to grade so long as the instructor(s) have sufficient time to properly evaluate such exams. (The turnaround time on final exams needs to be sufficient to allow this good practice to continue.)

Catalog Changes: The catalog should list the semesters in which the courses are planned to be offered in order to help students and their advisors make more informed decisions related to course scheduling.

No changes specific to the Physics course listings appear to be appropriate at this time. The college should continue to be flexible in allowing transfer students to have some flexibility in their programs of study so as to fit the wishes of the student's intended transfer institution.

Budget Justification (What resources are necessary to improve student learning?)

The continuation of equipment purchases is needed so as to insure that laboratory student groups do not grow to a size that encumbers learning. Some additional funds are needed to increase student and instructor access to software and hardware to perform physics learning activities. Some additional funding is needed for lecture demonstration equipment. Continued support of the IT and LT departments is needed in relation to laboratory computers, computer labs, and podium electronics to support both the laboratory and lecture environments.

There is an important need to make group mailings possible for advisors to keep better in touch with their advisees.

IT (the Information Technology Department) needs to make a simple change to the settings in the WebAdvisor screens. Some screens have blue text on a green background making it extremely difficult to read for individuals, like myself, with limited color vision. I am sometimes forced to print a copy of what I can't read on the screen which is both a waste of time and resources.