Internal Reviewer Review Report – Physics B.S.
California State Polytechnic University, Pomona

The purpose of this internal review of the Physics B.S. is to provide an unbiased examination of the quality of education and service in the program, and to identify opportunities for improvement and growth. After carefully reviewing the program's Self Study, we took part in an internal visit on March 11, 2024, with the Physics and Astronomy Department to review. This report is divided into sections based on the lines of inquiry and highlights the strengths, challenges, and recommendations.

Inclusive Polytechnic Identity	Strengths	• The Physics and Astronomy Department is generally well aligned with the elements of an inclusive polytechnic education identified by the university with a series of activity and recitation classes intended to reinforce critical thinking and problem-solving skills. • The department has an impressive professional development and career readiness program with that connects students with alumni with their industry advisory board and alumni events.
	Challenges	• There are no department level vision and values statements
	Recommendation	• Develop department level vision and values statements to go with an existing department level mission statement and align with the university and College of Science level statements.

Department Structure and Organization	Strengths	• The department has a strong focus on student success that is readily apparent. • The department has had several new hires. • There is a department advisor in place.
	Challenges	• There is a recognition in the department that the workload is not always equitable and that there is too much administrative/service work put on faculty that takes away from research opportunities with students. This has led to some moral issues. • Some faculty are frustrated with advising – would like the ability to advise junior and senior level students. • There have also been several faculty losses. The student to faculty ratio has remained the same due to several faculty losses.
	Recommendation	• The department can use more administrative help and/or reassign time with some service work to address a more equitable workload. • Have more faculty mentorship. • Improve student to faculty ratio with new hires.

Assessment	Strengths	• The departments assessment program is well developed. Student and program learning outcomes are aligned. • Annual assessment reports go back to 2017 with clearly laid out goals and reflections.
	Challenges	• There are no clear "Closing the loop" strategies that address reflections. Though this review recognizes that some "closing the loop" work has been done.
	Recommendation	• Assessment reports should have more specific and clearer "closing the loop" strategies that clearly address reflections and results from their assessment. • Recommend the Office of Assessment and Program Review hold a College of Science level workshop that outlines strategies for closing the loop to support all science departments.

GI 2025	Strengths	• The department has enhanced academic advising which involves regular check -ins and advising with tenure track faculty in the department. • As mentioned above, the addition of activity and recitation classes has enhanced student success. • The department has built a strong sense of community that increases student faculty interactions as well as connect with peers and alumni. • The addition of sophomore level (full year) classes that have reinforced necessary skills and provide a good transition to upper division work. • Implementation of the learning assistance program for peer tutoring • Since mathematics skill is important for student success in the department, many Upper division classes begin classes with a survey or assessment of mathematics ability necessary to succeed in the class. This helps instructors adapt course materials to address knowledge gaps. • The department does a curriculum review in consultation with the Industry Advisory Board to keep up to date with industry needs.
	Challenges	• Faculty want more time to conduct research with students. • Some faculty would like the opportunity to advise upper division students as they complete their degree. While the general college advisors are helpful, upper division students sometimes get lost in general advising and need faculty support for specific areas.
	Recommendation	• Support a summer mathematics boot camp that can reinforce mathematics necessary to be successful as a physics student. • Communicate with college advisors and dean about how faculty would like to support student advising in specific areas at specific times in their courses. • Continue good work

Technology	Strengths	• The department integrates technology throughout their full catalog of classes. Technology is a necessary tool for student success, especially in classes with a lab component. • The department employs multiple modern coding languages and modeling software including Matlab, Mathematica, Python, etc. • Staff are often consulted involving equipment and lower division lab schedules
	Challenges	• The department has not gained new research or instructional space since the last program review.
	Recommendation	• Provide support for website to keep information shared publicly up to date.

Support	Strengths	• Not covered thoroughly in discussion due to time constraints.
	Challenges	•
	Recommendations	• Continue faculty hires to improve student to faculty ratios as recommended in the 2017 program review.

Summary

The Physics and Astronomy Department has a strong program with some challenges that can be addressed. It is evident that faculty are engaged and working hard to address challenges, future goals, and student success. We thank the Department Chair, Program Review committee and all faculty for attending and contributing to the internal review. The department should be lauded for their work with student success. Most notably their industry advisory board and alumni-student relationships are commendable and should serve as a model for other departments. Faculty in this department have taken great strides toward student success with the implementation of enhanced academic advising, the addition of activity

and recitation classes, and the fostering of a sense of community. Like many departments, there are challenges with a lack of research and instructional space, administrative support, improved student to faculty ratios, and having more time for student focused research. With support, this department can meet these challenges.

Sincerely,

Reviewer 1: Stephen Osborn Signature/Date: Steph Osborn 05/08/2024

Reviewer 2: Kimberley Miller Signature/Date: 05.08.2024