Assessment Plan

Yuba Community College District

YC - Physics & Astronomy Program Recommendations

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Program Description: The Physics/Astronomy department is a small, single-fulltime faculty program that primarily provides the background physics education required for engineering and life science majors. Chemistry, computer science, and mathematics majors may also require physics, but the vast majority of students are engineering and life science. The department also offers an introductory Astronomy course that many students take to fulfill general education science requirements. Yuba College rarely sees Physics majors. Physics is particularly important for engineering students, and the courses taught at Yuba may be the only pure physics courses that they take in the pursuit of an undergraduate degree.

Physics 2A/3A and Physics 2B/3B are the lecture/laboratory course designations for the algebra-based courses that most life science students take. Physics 4A, 4B, and 4C are the designations for the calculus-based courses that engineering students take (no separate laboratory course). Physics 2 series courses are both offered each semester. Physics 4A and 4C are offered only in the spring, and 4B is offered only in the fall. Typically, the 2 series has 20-35 students beginning the series every semester, and the 4 series has 20-35 students beginning the series each spring semester.

The program maintains a considerable inventory of equipment for demonstrations and laboratories. Maintenance of the equipment and the setup of laboratories and demonstrations require considerable time and budget commitment.

The physics program has seen a slow steady growth over the last 5 years that has lead to the department doubling the number of sections of the 2 series. These two courses were previously offered only once a year and are now offered every semester. The size of the class entering the 4 series in Spring 2012 is right at the room capacity.

Year of Review: 2011-2012

Type of Review: Self-Study (4-year review)

Executive Summary: The Physics/Astronomy department is a small, single-fulltime faculty program that primarily provides the background physics education required for engineering and life science majors. The department also offers an introductory Astronomy course that many students take to fulfill general education science requirements. The program has very stable enrollment and staffing requirements.

The only significant curriculum issue involves the life science students. For some years now, some schools are requiring calculus-based physics courses for life science majors. The department believes that it is time to study this issue again in collaboration with the biology department. One side of the issue is that the algebra-based courses we now teach reach more students than we would with a calculus-based series. The other side is that we limit the schools to which our students can transfer. This issue will be studied in the coming year.

The department has written SLOs and performed SLO assessments in all courses that are currently offered. The results have been used to identify areas for additional emphases in lectures.

While, in the long run, the department believes that a part-time laboratory setup/equipment maintenance person is needed, no request will be made in the current budget environment.

The department's long-term goal is to continue to provide first-class preparation for all students who require physics for their majors.

Future Goals and Program Direction: The department's long-term direction is to continue to provide first-class preparation for all students who require physics for their majors.

Recommendation: Physics Course Requirements for Life Science Majors

Perform a survey of physics course requirements for life science majors at California 4-year colleges. Whether Yuba should teach an algebra-based physics series or a calculus-based physics series for life science majors has been an ongoing issue. Some schools will not accept the algebra-based series. We would cut down on the number of students we could serve, however, if we went to a calculus-based series. University of California Davis still accepts the algebra-based series we teach, and that is where a large fraction of our students go. We should, however, gather data on a reasonably comprehensive list of schools and discuss the requirements with the biology department.

Year(s) Requested: 2011-2012
2012-2013
Request Date: 03/01/2012
Inactive Date: 02/01/2013
Recommendation Priority: 2. Medium Priority

Plans of Action

Plan of Action	Budgetary Impact	Timeline/Responsible Party	Active
Gather data during the Spring 2012 semester. Meet with biology faculty to discuss the data in the Fall 2012 semester. **Type:** Curriculum/SLO	None	Fiering	Yes