

Search Standards By User

Source: IPR

Cycle: Instructional Program Review 2016-17

User Name: Lead Faculty, Astronomy and Physics

Response Types: All Responses Types

1 Executive Summary

0 Executive Summary

Summarize your program's strengths, opportunities, challenges, and action plans. This information will be presented to the Board of Trustees. [1000 word limit]

Response Detail

No Response Information to Display

Narrative

The physics program at Cañada College presents the opportunity to introduce students to the physical sciences and scientific thinking. The courses require students to learn content and develop critical thinking skills. Additionally, they foster a positive social environment through group oriented Lab and study sessions.

Physics enrollments are increasing. The physics program suffers from lack of available facilities (lecture and lab rooms) at the time that the students want the courses. Also the physics program suffers from lack of available adjunct faculty. The physics program requests 50% of full time tenure position with the remaining 50% possibly being a math or computer science position.

Suggested Follow Ups

Date	Suggested Follow Up
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No Suggested Follow Ups to Display

2 Program Context

1 Mission

Identify how your program aligns with the college's mission by stating which categories of courses you offer: Career Technical, Basic Skills, Transfer, and/or Lifelong Learning. If your program has a mission statement, you may include it here.

Response Detail

No Response Information to Display

Narrative

Career Technical Basic Skills Transfer Lifelong Learning

Mission statement:

The Physics & Astronomy Department endeavors to prepare students for successful transfer to four-year institutions, to provide the prerequisite foundation in physical sciences for further work in engineering and the sciences, to foster critical thinking and active learning, and to fulfill the needs and interests of students by having a well-rounded curriculum of lecture and laboratories.

Suggested Follow Ups

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2 Articulation

Are there changes in curriculum or degree requirements at high schools or 4-year institutions that may impact your program? If so, describe the changes and your efforts to accommodate them. If no changes have occurred, please write "no known changes".

Response Detail

No Response Information to Display

Narrative

There are no expected changes for physics.

Suggested Follow Ups

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No Suggested Follow Ups to Display

3 Community and Labor Needs

Are there changes in community needs, employment needs, technology, licensing, or accreditation that may affect your program?. If so, describe these changes and your efforts to accommodate them. If no changes have occurred, please write "no known changes". CTE programs: identify the dates of your most recent advisory group meeting and describe your advisory group's recommendations for your program.

Response Detail

No Response Information to Display

Narrative

There are no expected changes for physics.

Suggested Follow Ups

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No Suggested Follow Ups to Display

3 Looking Back

4 Curricular Changes

List any significant changes that have occurred over the prior two years in your program's curricular offerings, scheduling, or mode of delivery. Explain the rationale for these changes.

Response Detail

No Response Information to Display

Narrative

There are no major expected changes in course offerings at this time.

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No Suggested Follow Ups to Display

5.A. Progress Report - IPC Feedback

Provide your responses to all recommendations received in your last program review cycle.

Response Detail

No Response Information to Display

Narrative

The 2014 review requested that our programs connect our performance and data packet analysis more explicitly to our action plans. While we feel this was satisfied last year, we continue to make additions to our respective analysis and plans.

Suggested Follow Ups

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No Suggested Follow Ups to Display

5.B. Progress Report - Prior Action Plans

Provide a summary of the progress you have made on the strategic action plans identified in your last program review.

Response Detail

No Response Information to Display

Narrative

In the 2015 program review we identified the following action plans:

- 1) To improve student success, require homework to be mandatory. In addition to being mandatory, late homework is not accepted. This was piloted in spring 2015. A few students were dropped early in the semester for failure to complete homework assignments. The overall effect pressure has been a positive one. The students learn to responsible for completing their homework on time. For some of the students this helps them focus on the homework deadline and motivates them to work together to get the homework problems solved.
- 2) Pilot the use of discussion boards to facilitate problem solving discussion. In a limited trial it did seem to have a positive effect of helping the students communicate with each other. We plan to continue testing it however the switch to canvas has interrupted the implementation. It will resume once we become more familiar with canvas.
- 3) SLO evaluation revision. We continue to evaluate and review course level SLO's

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No Suggested Follow Ups to Display

6.A. Impact of Resource Allocations

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Describe the impact to-date that new resources (equipment, facilities, research) requested in prior years' program reviews have had on your program. If measurable impacts on student success have been observed, be sure to describe these and include any documentation/evidence. If no resources have been recently requested, please write "not applicable?".

Response Detail

No Response Information to Display

Narrative

The funding for the update of the physics equipment over the past several years has brought the labs closer to being fully effective for more of the students enabling smaller groups and more experiments. The funding of the STEM center and the Physics Tutoring program has been crucial in maintaining student success.

Suggested Follow Ups

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No Suggested Follow Ups to Display

6.B. Impact of Staffing Changes

Describe the impact on your program of any changes in staffing levels (for example, the addition, loss or reassignment of faculty/staff). If no changes have occurred, please write "not applicable".

Response Detail

No Response Information to Display

Narrative

n/a

Suggested Follow Ups

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No Suggested Follow Ups to Display

4 Current State of the Program

7 Enrollment Trends

Use the Productivity data packet to examine your enrollments (headcount, FTES, Load) and pattern of course offerings (Productivity by Courses by Semester). How have your enrollments changed? What changes could be implemented, including changes to course scheduling (times/days/duration/delivery mode/number of sections), marketing, and articulation of pathways that might improve these trends? NOTE: If other sources of data are used, please upload these documents or provide URLs.

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Response Detail

No Response Information to Display

Narrative

Over the past five years, the load has averaged 388 with a standard deviation of 28. The fill rate has averaged 80% with a standard deviation of 9%. The Load is largely driven by the class size limitation for lab classes. Thus the fill rate is the more relevant number. While the fill rate has averaged 80%, the most recent data show a fill rate of 94.9%. The source of this success is not known, however, enrollments have been increasing and we are having difficulty seating all students who want to take some courses. The difficulty occurs in that, if we offer more sections to accommodate the demand, the fill rate would probably drop. Faculty have been accommodating some of the demand by taking more students into courses than should be allowed. This practice is problematic in a lab course.

We suggest that the department needs 50% of full time faculty member that could be shared with either Computer Science or Math departments.

This position is needed because suitable adjunct faculty are hard to find. An additional full time faculty member would offer greater flexibility in scheduling classes.

Suggested Follow Ups

Date	Suggested Follow Up
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No Suggested Follow Ups to Display

7.A. Connection & Entry - Observation

Observation: Describe trends in program and course enrollments, FTES, LOAD and Fill Rates. Cite quantitative data and identify the specific tables from the data packets. If other sources of data are used, please upload these documents or provide URLs.

Response Detail

No Response Information to Display

Narrative

Over the last five years the Headcount and the FTES has increased by approximately 50% (FTES =39 in 2009-10 to 63 in 2013-14). During the same time the FTEF went from 2.9 to 4.9, a 69% increase. Consequently the LOAD has fallen 402 to 382. Since more sections were opened to satisfy demand, the fill rates have dropped to the mid 70% level

Suggested Follow Ups

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No Suggested Follow Ups to Display

7.B. Connection & Entry - Evaluation

Evaluation: What changes could be implemented, including changes to course scheduling (times/days/duration/delivery mode/number of sections), marketing, and articulation that may improve these trends in enrollment?

NOTE: If you intend to implement any of these changes, you should create Action Plans in the Planning module of SPOL. Doing so will also allow you to request resources that may be required for successful implementation.

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Response Detail

No Response Information to Display

Narrative

Most courses are offered in both day and evening sessions to provide access to students. Reducing sections would improve LOAD however, it would limit access. The small size of the college and specifically the physics labs limits the ability to provide both access and efficiency.

Suggested Follow Ups

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No Suggested Follow Ups to Display

8-A. Access & Completion

One of the goals of the College's Student Equity plan is to close the performance gaps for disproportionately impacted students. The Equity Supplement data packet indicates which groups are experiencing disproportionate impact in your program. Which gaps are most important for improving outcomes in your program? How can the college help you address these gaps? What changes could be made?

Response Detail

No Response Information to Display

Narrative

According to the equity data, females and Hispanic students are disproportionately affected in access. Currently, we are working with the ACES group to understand why females do not take physics courses. Data suggest that females complete calculus (a prerequisite for calculus based physics) at a comparable rate to males but that they do not then go on and take a physics class at the same rate as males. Hence the access equity gap. The causes of this are not know but we are in the process of looking into what might be done.

Female students have a higher completion rate than males. This may come down to females being better able to self-assess what it takes to pass a physics course and a lack of maturity on the part of some male students.

Hispanic students also suffer from lack of access and lack of completion. However, the small population of Hispanic students makes this a harder problem to diagnose than the male/female disparities.

We suggest that the priority should be to understand and address the male/female disparity first, and if successful, see what disparities remain for minority students.

The over all student success rate has been above 70% two of the last five years. The average success rate is 67% while the goal is 70%. We are engaged with the ACES group to study ways of improving instruction with the goal of improving the success rate and increase the number of female students in STEM courses.

Suggested Follow Ups

Date	Suggested Follow Up
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No Suggested Follow Ups to Display

8.A. Progress & Completion -Observation

Observation: Describe trends in student success and retention disaggregated by: ethnicity, gender, age, enrollment status, day/evening. Cite quantitative data and identify specific tables from the data packets. If other sources of data are used, please upload these documents or provide URLs.

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Response Types: All Responses Types

Response Detail

No Response Information to Display

Narrative

Over the last five years, the retention rate has stayed at around 80% and the success rate has stayed around 70%.
By ethnicity, the one group that is significantly different from this trend is the Filipino Student (Success mid 30% and retention mid 40%)
By gender the success rate/Retention Rate is about the same for both male and female. The success rate is about 90% of the retention rate.
By age the success rate drops off dramatically after age 22.
First time students have a significantly lower success rate.
Day/evening have the same success/retention rate

Suggested Follow Ups

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No Suggested Follow Ups to Display

8-B. Completion - Success Online

The college has a goal of improving success in online courses. Examine the "Course Success and Retention by DE vs Non DE" data table in the "Effectiveness: Success and Retention" data packet. What significant gaps do you see in success between online/hybrid and non-online courses? What changes could be made to reduce these gaps? If your program does not offer online/hybrid courses, please write "not applicable".

Response Detail

No Response Information to Display

Narrative

Physics does not offer any online or hybrid courses.

Suggested Follow Ups

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No Suggested Follow Ups to Display

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Response Types: All Responses Types

8.B. Progress & Completion Online - Observation

Observation: For online courses describe any significant differences in the success and retention of students who are taking online courses compared to face-to-face courses

Response Detail

No Response Information to Display

Narrative

n/a

Suggested Follow Ups

Date	Suggested Follow Up
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No Suggested Follow Ups to Display

8.C. Progress & Completion - Evaluation

Evaluation: Based on these trends, what do you feel are significant factors or barriers influencing student success in your courses and program? What changes (e.g. in curriculum, pedagogy, scheduling, modality) could be implemented to improve these trends?

NOTE: If you intend to implement any of these changes, you should create Action Plans in the Planning module of SPOL. Doing so will also allow you to request resources that may be required for successful implementation.

Response Detail

No Response Information to Display

Narrative

In my opinion, the significant factors are lack of student maturity and an excess of choice in the life of the student. The strategy that I plan to pilot in 2015 is to make homework mandatory and institute a policy of dropping students who are not engaging with the homework. In my experience, students procrastinate engaging with the homework, get behind, get frustrated and usually drop. It is my goal to force that decision to occur within the first three weeks of the course (Before the census date)

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9.A. SLO Assessment - Compliance

Are all active courses being systematically assessed over a 3-year cycle? Describe the coordination of SLO assessment across sections and over time.

Response Detail

No Response Information to Display

Narrative

Yes, all SLOs are systematically assessed. The SLOs themselves have not changed significantly over the last several years. For courses that have multiple sections, all sections are used in SLO evaluation.

Suggested Follow Ups

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No Suggested Follow Ups to Display

9.B. SLO Assessment - Impact

Summarize the dialogue that has resulted from these course SLO assessments. What specific strategies have you implemented, or plan to implement, based upon the results of your SLO assessment? Cite specific examples.

Response Detail

No Response Information to Display

Narrative

SLO assesments have not prompted any changes in teaching.

Suggested Follow Ups

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Response Types: All Responses Types

10 PLO Assessment

Describe your program's Program Learning Outcomes assessment plan. Summarize the major findings of your PLO assessments. What are some improvements that have been, or can be, implemented as a result of PLO assessment?

Response Detail

No Response Information to Display

Narrative

The program student learning outcomes are supported by the course level SLO's. The PLO's are:

- 1) The Scientific Method
- 2) Effective Communication and Documentation
- 3) Critical Thinking and analysis of physical systems

The SLO's are evaluated through written Lab reports, presentations, and embedded questions on exams.

The departments is successful in completing the PLO's. Thus no changes are planned.

Suggested Follow Ups

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No Suggested Follow Ups to Display

10.A. PLO Assessment - Plan

Describe your program's Program Learning Outcomes assessment plan. Please specify whether you are using direct or indirect measurements of assessment.

Response Detail

No Response Information to Display

Narrative

PLOs are assesed through SLOs. We will be revising the physics SLOs to reflect attributes of the PLOs

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10.B. PLO Assessment - Impact

Describe your program's Program Learning Outcomes assessment plan and summarize the major findings of your assessments. What are some improvements that have been, or can be, implemented as a result of PLO assessment?

Response Detail

No Response Information to Display

Narrative

None.

Suggested Follow Ups

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No Suggested Follow Ups to Display

5 Looking Ahead

11 Program Planning

Construct Planning Objectives (through the Associated Planning Objectives field below) that describe your plans for program improvement over the upcoming two-years. As you write your objectives, be sure to explain how they address any opportunities for improvement that you identified throughout this Program Review. Add Action Plans and Resource Requests for any research, training, equipment or facilities improvements that will be needed in order to achieve your objectives.

Response Detail

No Response Information to Display

Narrative

There is no Narrative Entered.

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12 Personnel Projections

Describe your recent history requesting new faculty/staff positions. List the current and near-future new or replacement faculty/staff positions that you anticipate requesting. Identify the term or year in which you anticipate submitting the staffing request. If none are anticipated, please write "not applicable". (List only; no justification needed here.)

Response Detail

No Response Information to Display

Narrative

There is no Narrative Entered.

Suggested Follow Ups

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No Suggested Follow Ups to Display