



Program Review - Instructional Program Plan

Program Title: Physics

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Executive Summary

Please summarize your program's strengths, opportunities/challenges, and action plans. This information will be presented to the Board of Trustees. (1000 word limit)

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. Although the rate of growth has tapered off, the growth is still positive. The presence of the STEM center and the dedicated physics tutoring within the STEM center has been critical in producing the multifaceted effectiveness of the physics program. We will continue to work closely with the STEM center to enhance and improve the supports available to the students.

Program Context

1. Mission: Please identify how your program aligns with the college's mission by selecting the appropriate check box(es):

Career Technical Basic Skills Transfer Lifelong Learning

If your program has a mission statement, include it here.

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.

2. Articulation: Describe how your program's articulation may be impacted by changes in curriculum and degree requirements at high schools and 4-year institutions. Describe your efforts to accommodate these changes.

There are no expected changes for physics.



3. Community and Labor Needs: Describe how changes in community needs, employment needs, technology, licensing, or accreditation affect your program. CTE programs should identify the dates of their advisory group meetings.

There are no expected changes for physics.

Looking Back

4. Curricular Changes: List any significant changes that have occurred in your program's curricular offerings, scheduling, or mode of delivery. Explain the rationale for these changes.

There are no major expected changes in course offerings at this time. The one small change is that we will not offer PHYS 211 and 221 since they are to be offered on-line by CSM in 2015-16 year

5. Progress Report: Provide your responses to all recommendations received on your last program review and report on progress made on previous action plans and toward your strategic goals.

Link: [2013-2014 Program Plan and Feedback forms](#)

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.

6. Impact of resource allocations: Describe the impact to-date that each new resource (staff, non-instructional assignment, equipment, facilities, research, funding) has had on your program and measures of student success.

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.

Current State of the Program

Data packets link <http://www.canadacollege.edu/programreview/datapackets1314.php>

7. Connection & Entry:

- A. Observation: Describe trends in program and course enrollments, FTES, LOAD and Fill Rates. Cite quantitative data and specific tables from the data packets.

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

- B. 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?

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.

8. Progress & Completion:

- A. Observation: Describe trends in student success and retention disaggregated by: ethnicity, gender, age, enrollment status, day/evening. Cite quantitative data and specific tables from the data packets.

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

- B. 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.

Not Applicable: There are no on-line physics courses

- C. 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?

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)

9. SLO Assessment:



<https://smccd.sharepoint.com/sites/can/CANSLOAC/default.aspx>

- A. Are all course SLOs being systematically assessed at least once/4 years? Describe the coordination of SLO assessment across sections and over time.

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.

- B. Summarize the dialogue that has resulted from these assessments. What are some improvements in your courses that have been implemented through SLO assessment? How has student learning been improved by changes in teaching? Cite specific examples.

SLO assessments have not prompted any changes in teaching.

10. PLO Assessment:

PLO Assessment link https://smccd.sharepoint.com/sites/can/prie/_layouts/15/start.aspx#/

- A. Describe your program's Program Learning Outcomes assessment plans and results of direct and indirect assessments.

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

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

None.

Looking Ahead

11. Strategic goal & action plans:

How will you address the opportunities for improvement that you identified above in Articulation, Community & Labor Needs, Connection & Entry, Progress & Completion and PLO Assessment? Identify timelines for implementation, responsible party, and resource requirements.

Action Plan	Timeline	Responsible party	Resources required
Student Success: Mandatory Homework	Pilot Spring 2015	Partlan	None
Required use of discussion boards	Pilot Spring 2015	Partlan	Webaccess
SLO Evaluation/Revision	Ongoing	Partlan, Elteto	None



Complete the Resource Request form to request instructional equipment, IT equipment, facilities, professional development, research, or funding (if needed) and submit with this form to your Division Dean.

Link to resource request form <http://www.canadacollege.edu/programreview/instruction-forms.php>

SLO Evaluation Table:

Course	SLO	PLO	Late Evaluated	Next Evaluation
PHYS 210	1	3	Fall 12	Fall 16
	2	3	Fall 14	Fall 17
	3	3	Fall 12	Fall 15
PHYS 211	1	3	Fall 12	Fall 17
	2	3	Fall 12	Fall 15
	3	3	Fall 13	Fall 16
PHYS 220	1	3	Spring 13	Spring 17
	2	3	Spring 13	Spring 15
	3	3	Spring 13	Spring 16
PHYS 221	1	3	Spring 13	Spring 17
	2	3	Spring 13	Spring 15
	3	3	Spring 13	Spring 16
PHYS 250	1	3	Spring 13	Spring 14
	2	3	Spring 13	Spring 15
	3	1,2	Spring 13	Spring 16
PHYS 260	1	3	Fall 14	Fall 17
	2	3	Fall 13	Fall 15
	3	3	Fall 13	Fall 16
PHYS 270	1	3	Spring 14	Spring 18
	2	3	Spring 14	Spring 18
	3	3	Spring 13	Spring 15
	4	3	Spring 13	Spring 15
PHYS 405	1	NA	Fall 12	Fall 14
	2	NA	Fall 12	Fall 15
	3	NA	Fall 12	Fall 16