

Comprehensive Program Review

A. Department Information

Mission

Please enter your department's mission statement here.

The mission of the physics department is to instill an understanding of the fundamental laws of nature such that also developed is a student's ability to think critically and independently from authority, especially teachers. By learning the established scientific "method" of posing hypotheses and testing them with experiments, a successful student leaves the department with the ability to logically analyze and evaluate information with confidence. This ability allows the student to gain insight and make meaningful and logical conclusions about the problems encountered throughout the course of a career in a variety of fields especially within the STEM field. Additionally, we need to increase the success rate of minority, under-represented students in physics.

How does your program mission statement relate to the mission, vision and values of the college? (<https://www.deanza.edu/about-us/mission-and-values.html>)?

Our PLOs connect to the school's mission and core competencies by developing the intellect in encouraging thoughtful, deliberate, mindful, and patient reasoning and the methods learned empower the student as a valuable player in any problem solving environment within the community and society at large. Students hone their communication skills when participating in oral and written assignments by writing lab reports, completing lab projects and convincingly expressing their thoughts and opinions to their peers and professors. We develop the science and art of critical thinking by inculcating the use of logical reasoning in the application of the fundamental laws of nature to our world.

Program Goals

Enter 1-3 goals for your department to be achieved by spring 2027. Each annual reflection will ask your department to report on progress in meeting your goals. Each goal should be aligned to your department's mission and the college mission. All resource requests and personnel requests should be aligned with your program's mission and goals.

Goal title	Goal description	Responsible parties	Collaboration with	Guided Pathways engagement	What evidence will be used to monitor progress?	How will you assess achievement of the goal?
Close The Equity Gap	help impacted students successfully go through their physics series	Instructors	Dean	Tutoring and support services	students success rate and program review data	success rate compared to previous years
Create ADT For Physics	Creat Associate Degree for Transfer for physics or in cooperation with other departments	instructors	Dean, curriculum office		the approval of the degree	students getting the degree before they transfer.

Changes Imposed by Internal/External Regulations or Factors

Are there factors unique to your program that may affect your enrollment, success rates or staffing that RAPP should be aware of? (e.g., curriculum changes, program reorganization, noncredit curriculum, loss of personnel, legislative mandates, etc.)

[object Object]

B. Enrollment Trends

Enrollment Variables and Trends

Enrollment Trends						
Physical Sciences/Math/Engin - Physics-FD						
	2018-19	2019-20	2020-21	2021-22	2022-23	5-yr %Inc
Unduplicated Headcount	1,340	1,466	1,441	1,442	1,325	-1.1%
Enrollment	1,974	2,215	2,176	2,123	1,955	-1.0%
Sections	60	66	73	70	66	10.0%
WSCH	4,184	4,907	4,741	4,591	4,231	1.1%
FTES (end of term)	283	330	320	310	282	-0.4%
FTEF (end of term)	7.0	7.7	8.7	8.5	8.2	16.3%
Productivity (WSCH/FTEF)	595	638	547	538	517	-13.0%

In the data table above, what does the Enrollment trend indicate? For definitions of enrollment terms, please see the glossary (<https://www.deanza.edu/ir/documents/Glossary.pdf>).

- the data trend shows an increase in Enrollment
- the data trend shows a decrease in Enrollment
- the data trend shows no change and/or flat in Enrollment

Reflect on Enrollment Trends

Discuss the factors that would help the college understand your programs' enrollment trends. How may these trends align with your program mission and goals?

From 2018-2019 to 2019-2020 the enrollment increased by 12.2%. This was just before the pandemic. During the pandemic from 2018-2019 to 2021-2022 the enrollment still by increased by 7.5%. From 2018-2019 to 2022-2023 the enrollment decreased by 1%. This is

expected due to the effects of the pandemic on student enrollment. The 1% decrease may be attributed to students moving to other schools that still offered online instruction. The enrollment trends don't align with the program mission and goals given the effects of the pandemic.

CTE Programs - Statewide and Regional Labor Market Trends

CTE Programs Only

1. Review and summarize the Lightcast Analyst Occupational Outlook data for your CTE program (<https://foothilldeanza.sharepoint.com/:f:/s/dactedepartments/EiRTueQ8GrNLqItlQw2twpsBMFCs7X5djTVeo6Jss3W0Jg?e=1ybpmY>).
2. Cite current industry trends.
3. Provide an overview of your program advisory committee's recommendations relating to existing and new course and certificate/degree offerings. Cite additional data when applicable.

N/A

D. Course Success

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Course Success

Physics-FD

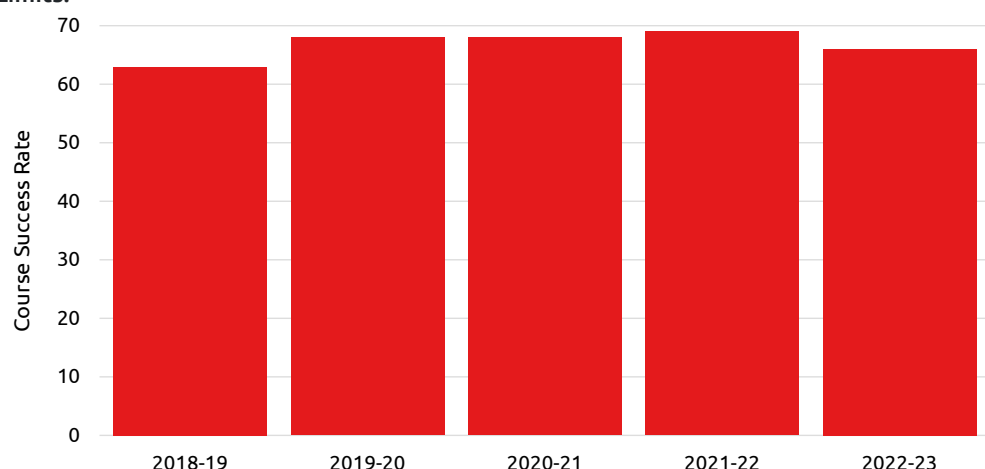
Who uses this report:

All users who want to further explore their enrollment or course success data.

What is this report:

This report is an extension of the Program Review Data Sheet. It has additional student characteristics and users can compare two groups of students at the same time.

Limits:



Limits:

Measures: Enrollments and Course Success Rate and Success Count

	2018-19			2019-20			2020-21			2021-22			2022-23		
	Enrollments	Course Success Rate	Success Count	Enrollments	Course Success Rate	Success Count	Enrollments	Course Success Rate	Success Count	Enrollments	Course Success Rate	Success Count	Enrollments	Course Success Rate	Success Count
Measures	1,974	63%	1,252	2,215	68%	1,502	2,176	68%	1,482	2,123	69%	1,455	1,955	66%	1,283

Data loaded 17-Aug-2023

In the data table above, what overall trends are you seeing in Course Success?

- the data trend shows an increase in Course Success
- the data trend shows a decrease in Course Success
- the data trend shows no change in Course Success

Exploring Course Success Rate Trends

1. What could be factors that influence success rates in your department?
2. What strategies does your department have in place to increase or maintain current success rates?
3. Are there other trends that you see when exploring different courses in the same department (How to access success rates by course: https://www.deanza.edu/ir/documents/How_to_Access_Your_Program_Review_Data.pdf)
4. How do course success rate trends align with your program goals?

1. Factors that influence the success rates in the physics department include:

1. physics tutors
2. recitation sections
3. large lecture classes
4. early student intervention

2. Strategies to increase or maintain success rates include:

- a) increase the number of qualified tutors
- b) include recitation sections for courses

c) reduce the class size

d) have an early student intervention plan

3. PHYS 4A & 4C have a better success rate than PHYS 2A & 2C. These courses cover similar topics. However, PHYS 4B has a lower success rate than PHYS 2B which seems unexpected.

4. Our course success rate trends does align with your program goals of increasing the transfer to 4 - year schools. From 2018-2019 to 2021-2022 the success rate increased from 63% to 69% but in 2022-2023 (post pandemic) it decreased to 66%. The decrease can be attributed to students coming back to face-to-face instruction.

Course Success with Disproportionate Impact (credit and non-credit)

Limits: 2022-23

Who uses this report:

All users who want to explore student equity and disproportionate impact in course success.

What is this report:

This report highlights student groups with a negative percentage point gap and student groups experiencing disproportionate impact. Data reflects credit sections. Student groups with "N/A" enrollment denotes suppressed data.

How to interpret the data:

A negative percentage point gap means a student group has a lower success rate than the comparison group consisting of all students not in the student group being examined. When a student group is experiencing disproportionate impact, this means that (1) there is a negative percentage point gap and (2) this gap is unlikely to be due to chance. Programs are encouraged to prioritize discussions and address the student groups experiencing disproportionate impact.

New features:

To display only student groups with disproportionate impact, click on the link "Click here to show only groups with disproportionate impact." To add a comparison unit that is one level higher (e.g., course level compared to department level), **be sure to select a college, division, department or course**, then click on the link "Click here to show and compare disproportionate impact with [X]".

Success rate

The number of students receiving an A, B, C or P grade divided by the total number of students receiving a grade. Rate is rounded.

Comparison success rate

The success of all students except for the group being examined (e.g., the comparison success rate for Latinx students is the success rate of all students who are not Latinx). Rate is rounded.

Additional successes needed to erase percentage point

This value provides a way for practitioners to think of gaps in terms of student successes, and illustrates the number of additional successes needed to avoid a percentage point gap.

Legend:


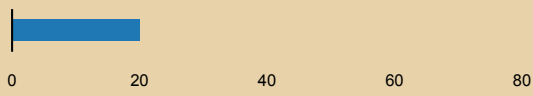
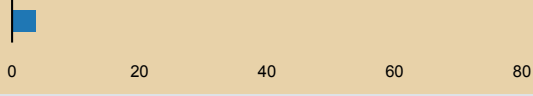
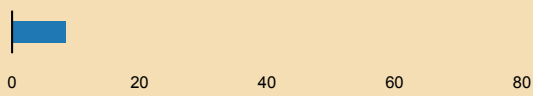
Yellow: Student groups experiencing a negative percentage point gap that is not statistically significant

Orange: Student groups experiencing disproportionate impact according to the Percentage Point Gap Minus One (PPG-1) method¹

Currently showing all groups. [Click here to show only groups with disproportionate impact.](#)

[Click here to show and compare disproportionate impact with .](#)

Number of sections: 66

Student group	Enrollment at census	Student group success rate	Comparison success rate	Percentage point gap	Chart	Additional successes needed to erase percentage point gap
All Students (Physics-FD, 66 sections)	1,955	66%	66%	0		
Asian	1,114	69%	61%	+9		
Black	48	48%	66%	-18		9
Filipinx	92	65%	66%	0		1
Latinx	243	48%	68%	-20		49
Native American	N/A					
Pacific Islander	N/A					
Unknown ethnicity	174	76%	65%	+12		
White	274	63%	66%	-3		10
Female	514	68%	65%	+3		
Male	1,418	65%	68%	-4		54
Non-Binary	0					
Unknown gender	23	78%	65%	+13		
Foster youth	N/A					
Individuals with disabilities	59	61%	66%	-5		3
Low Income	685	60%	69%	-8		58
Not Low Income	1,270	69%	60%	+8		
Veterans	37	73%	65%	+7		

¹The PPG-1 method follows the CCCCCO method for calculating disproportionate impact. Disproportionate impact is when (1) a student group's PPG value is less than -2 (e.g., -3, -4, -5, etc.) and (2) the absolute PPG value is greater than the calculated margin of error. PPG is calculated by comparing a student group's success rate against the success rates of all students except for the group being examined (e.g., Latinx PPG is Latinx success minus the success of all students except for Latinx students).

In the data table above, what does the data indicate about the Success rate of various ethnic groups within your department compared to the comparison group for the most recent academic year? (i.e., as displayed in the Percentage point gap column)

The Percentage point gap between Asian students and all other students shows:

- there is no gap (e.g., 0)
- there is a negative gap of 5-percentage points or less (e.g., -5)
- there is a negative gap greater than 6 percentage points (e.g., -6)
- there is a positive percentage point gap (e.g., +2)

The Percentage point gap between Black students and all other students is:

- there is no gap
- there is a negative gap of 5-percentage points or less
- there is a negative gap greater than 6 percentage points
- there is a positive percentage point gap

The Percentage point gap between Filipinx students and all other students is:

- there is no gap
- there is a negative gap of 5-percentage points or less
- there is a negative gap greater than 6 percentage points
- there is a positive percentage point gap

The Percentage point gap between Latinx students and all other students is:

- there is no gap
- there is a negative gap of 5-percentage points or less
- there is a negative gap greater than 6 percentage points
- there is a positive percentage point gap

The Percentage point gap between White students and all other students is:

- there is no gap

- there is a negative gap of 5-percentage points or less
- there is a negative gap greater than 6 percentage points
- there is a positive percentage point gap

The Percentage point gap of one additional group of your choice:

- there is no gap
- there is a negative gap of 5-percentage points or less
- there is a negative gap greater than 6 percentage points
- there is a positive percentage point gap
- not applicable

Exploring Gaps in Successful Course Completion by Ethnicity

1. What differences do you see in successful course completion rates by ethnicity?
2. What are your thoughts on these differences?
3. Are there other trends that you see when drilling into the data that may be important for your department to explore (e.g., foster youth, individuals with disabilities, low income, veterans)?
4. Which additional student group did you choose to explore and why?
5. How do these trends align with your program's mission and goals?

1. What differences do you see in successful course completion rates by ethnicity?

Asians and Whites had the highest successfull rate of completion and LatinX had the lowest. For PHYS 4A, Asian was 64% and Latinx was 45%. For PHYS 4B, Asian was 80% and Latinx was 50%.

2. What are your thoughts on these differences?

The difference is significant and we need to implement a plan to reduce the gap.

3. Are there other trends that you see when drilling into the data that may be important for your department to explore (e.g., foster youth, individuals with disabilities, low income, veterans)?

Not enough data provided to determine trend.

4. Which additional student group did you choose to explore and why?

I chose students with disability, low income, and veterans because these students that often need additional support in the class.

5. How do these trends align with your program's mission and goals?

The trend does support our mission and goals that we need to help minority, under-represented students succeed in physics and increase the number that transfer to 4-year schools.

Teaching and Learning Strategies

1. What teaching and learning strategies might be helpful in narrowing any gaps in successful course completion?
2. How do the listed teaching and learning strategies align with your program's mission and goals?

1. What teaching and learning strategies might be helpful in narrowing any gaps in successful course completion?

We have discussed the idea of increasing the amount recitation sections to support students in non-lecture class situations. An idea similar to the MPS program in math. We have also considered re-apportioning the amount of lecture vs. lab time in order to support students in small group settings. We are also encouraging early intervention (first week) to identify students that need support to continue in the class. We plan to offer some classes in the online format to accommodate students that have special scheduling circumstances. Also planning to see how we can increase the number of physics tutors.

2. How do the listed teaching and learning strategies align with your program's mission and goals?

They support our mission and goals that we need to help every student, including minority, under-represented students succeed in physics and increase the number that transfer to 4-year schools.

Trends in Awards

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Degrees and Certificates by Ethnicity

Physics-FD

Who uses this report:

All users who need degree and certificate data.

What is this report:

This report provides the degree and certificate counts by college, division and department. Additionally, all users could explore degree and certificate awarded by ethnicity and gender.

Data loaded 24-Oct-2023

No data returned for the criteria selected

In the data table above, what are the trends in regard to the number of awards within your program?

Trends in Associate Degrees awarded show:

- an increase in the number of Associate Degrees awarded
- a decrease in the number of Associate Degrees awarded
- no change in the number of Associate Degrees awarded
- Not applicable

Trends in Associate Degrees for Transfer awarded show;

- an increase in the number of Associate Degrees for Transfer awarded
- a decrease in the number of Associate Degrees for Transfer awarded
- no change in the number of Associate Degrees for Transfer awarded
- Not applicable

Trends in Credit Certificates awarded show:

- an increase in the number of Credit Certificates awarded
- a decrease in the number of Credit Certificates awarded
- no change in the number of Credit Certificates awarded
- Not applicable

Trends in Non Credit Certificates awarded show:

- an increase in the number of Noncredit Certificates awarded
- a decrease in the number of Noncredit Certificates awarded
- no change in the number of Noncredit Certificates awarded
- Not applicable

Reflecting on Trends in Awards

1. What trends do you see across awards in your department?
2. How do the trends in awards align with your program's mission and goals?

N/A

Reflecting on Award Offerings

1. For each program leading to an award, identify any courses that have not been offered in the last two years. Briefly explain why the courses have not been offered. For courses that will not be offered, how does your program plan to update the program so that students can complete the requirements?
2. Based on a review of course offerings and the number of awards offered and conferred, is your department planning on removing any degrees or certificates from the college catalog? If so, please list those being removed and a short explanation as to why.
3. Does your department have any plans to offer new degrees or certificates? If so, please list and provide a short explanation as to why.

N/A

Staffing Trends

Faculty Workload

Faculty Workload Physical Sciences/Math/Engin - Physics-FD						
	2018-19	2019-20	2020-21	2021-22	2022-23	5-yr %Inc
Full Time Load	3.0	2.9	3.0	2.3	3.4	14%
Full Time %	42.1%	38.0%	34.2%	27.3%	41.3%	-2%
Overload	1.2	1.3	1.5	1.1	0.9	-26%
Overload %	17.1%	17.4%	17.4%	12.4%	10.9%	-36%
Part Time Load	2.9	3.4	4.2	5.1	3.9	36%
Part Time %	40.9%	44.5%	48.4%	60.3%	47.8%	17%
Total FTEF	7.0	7.7	8.7	8.5	8.2	16%

What trends do you see in the last five years in regard to the Full Time %? (i.e., percentage of classes being taught by full time faculty, not including overload or summer)

- the data trend shows an increase in Full Time %
- the data trend shows a decrease in Full Time %
- the data trend shows no change in Full Time %

Staffing Needs

Provide a brief overview of your department's staffing needs. Personnel requests are to be submitted on a separate form.

1. What are full time faculty needs to ensure the program's health, growth or vitality?
2. What are classified staffing needs to ensure the program's health, growth or vitality?
3. What strategies does your program have in place to ensure students are being successful when faced with the current staffing ratios?
4. What strategies does your program have in place to retain new faculty, if applicable?

N/A

Assessment Cycle

Student Learning Outcomes Assessment Cycle

Navigate to <https://www.deanza.edu/slo/#post> which will take you to an accordion listing of SLO assessments under "Student Learning Outcomes and Assessments Summaries by Division"

1. Summarize the dialogue that has resulted from SLO and/ or PLO assessments.
2. What specific strategies has your department implemented, or plan to implement, based on the results of the SLO/PLO assessments conducted?
3. How do these strategies align with the program's mission and goals.

1. Summarize the dialogue that has resulted from SLO and/ or PLO assessments.

The department agreed that we need to address the students needs in a variety of ways to help increase the student success rate.

2. What specific strategies has your department implemented, or plan to implement, based on the results of the SLO/PLO assessments conducted?

Early student intervention, tutoring, recitations and referring students to academic support programs such as MESA, Puente and EOPS.

3. How do these strategies align with the program's mission and goals.

They support our mission and goals that we need to help every student, including minority, under-represented students succeed in physics and increase the number that transfer to 4-year schools.

Dean/Manager Comments

I agree with the analysis done in this report. The enrollment numbers for fall are strong and the faculty is very focused on student centered teaching. The limitations for the program are mostly lab related; Both space and a lack of lab technician. Not having a lab technician impacts the support students get in their lab classe in a negative way.

STOP. Do not submit form. Please inform your dean/manager when the form is complete. They will submit the form when they have added their comments above.

This form is completed and ready for acceptance.