Comprehensive Program Review

A. Department Information

Mission

Please enter your department's mission statement here.

The Biology Department supports and reinforces the mission of De Anza College by fostering a multicultural learning environment that promotes critical thinking, critical inquiry, and a respect for diversity and equity. We encourage an appreciation of biological concepts that help students make informed, independent, and reflective stances around global, cultural, social, and environmental issues. We provide students with the tools to effectively communicate and express their perspectives so that they can thrive in a world increasingly shaped by science and technology. We support students, reinforcing skills and habits that allow for physical and mental wellness, personal responsibility and accountability. By offering a broad range of quality courses, we meet diverse student needs—to enhance further education in the biological sciences, or in related courses across the college, or to support general education so all students can realize their educational goals. Our goal is to prepare students for future careers in the life sciences, and instill in all of our students an understanding and life-long enthusiasm for the biological sciences.

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)?

The Biology department's mission statement aligns with the college's vision in empowering our students to attain their educational goals, and being able to use the knowledge and understanding of biological concepts from our courses to become active contributors and socially responsible leaders within their communities and beyond. Like the mission statement of the college, the Biology department wants to challenge students of all backgrounds to develop into critical thinkers who can make informed and independent decisions using the skills they obtain from taking our courses. The Biology department's mission statement embraces the values of the college and you can find them within our statement, and more importantly, within the day to day instruction of our students. Elements of those values: integrity, innovation, equity, developing human capacity, and the institutional core competencies of the college can be found throughout the department's mission statement.

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?
Greater alignment in courses.	We would like to have conversations regarding whether or not courses should be more aligned in regards to the textbook, rigor, etc.	Biology Department Chair and interested Biology faculty	Biology faculty	Using the Village to get student input.	Having these discussions occur on a semi-regular basis.	Coming to a consensual decision both as a department and with the instructors of the various Biology courses based on all inputs.
OER discussion/adoption	To decide as a department or by course if OER would or should be utilized.	Biology Department Chair and interested Biology faculty	Biology faculty	Using the Village to get student input.	Having these discussions occur on a semi-regular basis.	Coming to a consensual decision both as a department and with the instructors of the various Biology courses based on all inputs.
Increasing College-wide Competency in Biology faculty	To provide opportunities for interested Biology faculty to experience and better understand more of the college-wide committees/procedures and structures to promote future potential college leaders.	Biology Department Chair	Biology faculty	N/A	Providing regular information sessions for faculty, along with continued support.	Having more Biology faculty becoming involved across the college.

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.)

N/A

B. Enrollment Trends

Enrollment Variables and Trends

Enrollment Trends
Biology-FD

	2018-19	2019-20	2020-21	2021-22	2022-23	5-yr %Inc
Unduplicated Headcount	4,153	4,093	4,186	3,903	3,486	-16.1%
Enrollment	5,970	5,816	6,072	5,633	5,072	-15.0%
Sections	206	192	189	184	172	-16.5%
WSCH	12,682	12,815	13,227	12,305	10,907	-14.0%
FTES (end of term)	858	866	895	832	727	-15.3%
FTEF (end of term)	21.4	21.0	21.5	20.7	20.1	-6.0%
Productivity (WSCH/FTEF)	593	611	614	593	542	-8.5%

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?

Our enrollment trends come as no surprise in that pre-pandemic and mid-pandemic enrollment was quite strong. This was a result of offering sections on line, when faculty were not limited in enrollment by seat count restrictions. In addition during the pandemic as students were not concerned with commute limitations (distance, traffic, costs) or class conflicts they were also enrolling in more sections. Post-pandemic and returning to campus is where we see enrollment trend show a decline (2022-2023). Students were slow to return to campus facing the constraints above and faculty were once again limited by laboratory seating limits. We are already seeing a change in this trend for Fall 2023 as enrollment is once again increasing (up 8.7%) In regards to how these trends align with the Biology department's mission, we hope to help as many students as possible realize their educational goals and this may necessitate offering more sections to meet student demand as we continue to watch enrollment trends.

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/EiRTueQ8GrNLqltlQw2twpsBMFCs7X5djTVeo6Jss3W0Jg?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

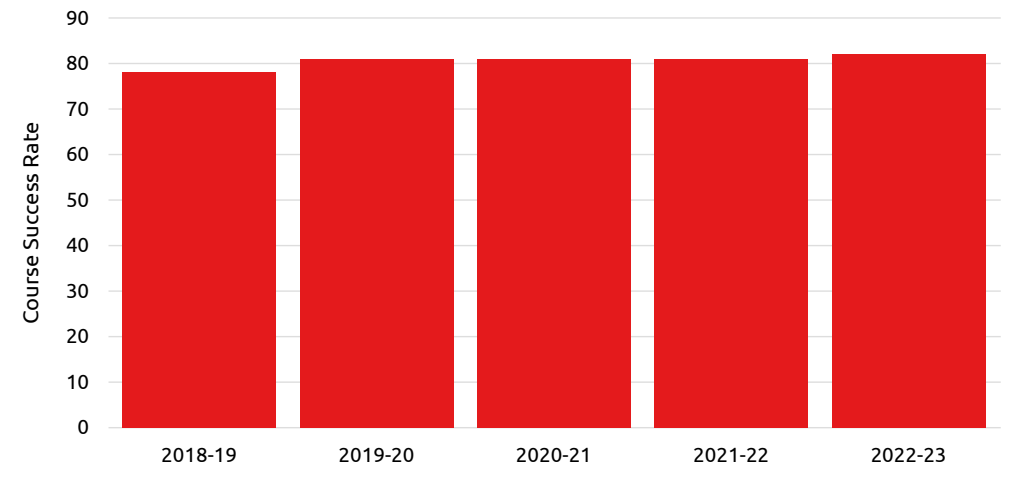
Who uses this report:

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	5,970	78%	4,651	5,816	81%	4,721	6,072	81%	4,948	5,633	81%	4,590	5,072	82%	4,146

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?

There are many factors that influence success rates. One factor could be the return to face-to-face instruction - fully face-to-face or hybrid. In addition, having slightly smaller classes in the face to face laboratory classrooms may play a role in our largest success rate in 2022-2023 over the last five years. Strategies for increasing or maintaining current success rates include some of the program goals. Having discussions about OER adoption and alignment of courses, and coming to a consensus about them may help to increase or maintain current success rates. Other strategies include utilizing the Student Success Center, the Connect program, and working with MESA to help students succeed in our courses.

An interesting trend that occurred when looking at the different courses in the department was that all courses in the Biology majors year-long sequence (6A, 6B, 6C) showed the highest success rates in 2022-2023 when compared with past years. Also interesting to note was that the two courses that had the highest enrollment (Nutrition 10 & Biology 10) also showed that same trend. In addition, both courses that have year-long course sequences (Biology 6 A,B,C & Biology 40 A,B,C) showed higher success rates with each course in 2022-2023, which may indicate that the instructors are providing the proper preparation for each subsequent course.

These course success rates align with our department's goal of preparing our students for future careers in the life sciences, as illustrated by the biology majors' sequence showing the highest success rates in 5 years, and both year-long course sequences showing higher success rates with each course in the sequence. In addition, providing a quality education and instruction for the general education of De Anza students is evidenced by the increased success rates in the two Biology courses with the highest enrollment.

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) method[1]

Currently showing all groups. Click here to show only groups with disproportionate impact.

Hide cells with fewer than 10 students

Biology-FD

2022 Summer to 2023 Spring

Number of sections: 172

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	5,072	82%	82%	0		
Asian	2,104	88%	77%	+11		
Black	192	64%	82%	-18		36
Filipinx	499	80%	82%	-2		10
Latinx	1,382	75%	84%	-10		132
Native American	15	80%	82%	-2		1
Pacific Islander	37	81%	82%	-1		1
Unknown ethnicity	117	85%	82%	+4		
White	726	82%	82%	+1		
Female	3,159	82%	82%	0		12
Male	1,872	82%	82%	+0		
Non-Binary	0					
Unknown gender	41	80%	82%	-1		1
Foster youth	11	27%	82%	-55		7
Individuals with disabilities	167	75%	82%	-7		12
Low Income	2,383	78%	85%	-7		176
Not Low Income	2,689	85%	78%	+7		
Veterans	62	76%	82%	-6		4

[1]The PPG-1 method follows the CCCCO 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?

By ethnicity, the two groups that had the largest negative gaps in regards to course completion rates were Black (-18) and Latinx (-10) students. Asian students had the largest positive gap (+11). It is interesting to note that ALL other ethnic groups had gaps only between -2 and +4.

Our thoughts on these differences would be to work on closing those negative gaps for Black and Latinx students. One approach on how to do this focuses on the student groups/organizations on campus that serve these students, and how we as a department can work with them to provide additional help in our courses.

Another trend that stands out to me is that low income students show a -7 gap while high income students show a +7 gap. This similarity in opposite directions is something to explore as a department and see if we can discuss ways to help lower that negative gap for low income students. The other groups that show a high negative gap are much, much smaller groups in regards to population size.

We chose to explore the low income student group both due to the negative gap as well as the number of students in this group. It is also a group whose data aligns with one of our department goals. We want to look into OER as a department, and this data would be very useful in this departmental discussion.

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?

In this hybrid format that most Biology courses have, it is very important that instructors take the time to **prepare** their students for the course they are teaching by providing a clear understanding of what the course entails and what the course's expectations and requirements are. This can be accomplished by providing a very detailed and clear course syllabus/greensheet. In addition, providing tools for the students to succeed, like study guides or practice quizzes, could be very helpful in preparing students for the course.

It is also important for the instructor to **be kind, open and available** for their students. If students are intimidated or turned off by an instructor's personality, they are more likely to not succeed in the course. Getting to know your students personally and providing a supportive learning environment would help to narrow gaps in success. If a student is comfortable with the instructor, they are more likely to ask for help if they need it.

As the quarter moves on, there is a need to provide students with opportunities to track their **progress** throughout the course so they can see where they stand. Grading assignments/exams/quizzes quickly and providing feedback on them is helpful for the student to take that feedback and use it on their next assignment/exam/quiz. Additionally, instructors can provide students with the opportunity to **reflect** on what they have learned and to identify areas where more support/explanation is needed.

It is important for the instructor to help **provide/inform the students about college resources** which will help the student to successfully complete the course. This can include tutoring, Connect, counseling services, and other support services that can help students if they are facing any additional challenges.

Trends in Awards

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Degrees and Certificates by Ethnicity

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?

The trend is that not many students go for their AS in Biology as most students who are majoring in Biology go straight for the BA/BS degree as undergraduates. The students do not see any additional value in obtaining a ASN or ADT.

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
Biology-FD

	2018-19	2019-20	2020-21	2021-22	2022-23	5-yr %Inc
Full Time Load	10.0	8.8	8.8	8.6	10.0	0%
Full Time %	46.8%	41.9%	41.0%	41.4%	49.6%	6%
Overload	2.1	2.7	3.2	3.8	3.2	53%
Overload %	9.7%	13.0%	14.8%	18.4%	15.7%	62%
Part Time Load	9.3	9.4	9.5	8.3	7.0	-25%
Part Time %	43.5%	45.0%	44.3%	40.3%	34.6%	-20%
Total FTEF	21.4	21.0	21.5	20.7	20.1	-6%

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?

We have a few of our full-time faculty who are nearing retirement and foresee a need for new hires in the near future. At the present time, we have a need for additional full-time faculty in anatomy and physiology, as one of our two full-time faculty who teach those courses is currently on Article 18 (reduced load), leading to many of these sections being taught by part-time faculty. These courses are in high demand with waitlists, and having additional full-time faculty member in this area will help to ensure the program's continued vitality.

We have an excellent group of classified staff who are essential to our programs viability. All Biology classes have a robust labs. This requires procuring supplies, preparing materials, maintaining media and cultures, ordering and maintaining complicated equipment, keeping lab spaces clean and functional and being available to problem solve when needed. We would not be able to conduct our classes, support and graduate our students without our classified staff support.

The strategies that we have in place to ensure the success of our students even when faced with some deficiencies in instructional staffing is by our ability to maintain a very talented and experienced group of part-time faculty. Many biology departments from colleges in our area have lost part-time faculty due to the cost of living in the area. We have been fortunate to have a group of part-time faculty members who go above and beyond for their students and for our department. Part of our strategy is to continually let our part-time faculty know how much they mean to the department as well as to give them the voice in the department that they deserve.

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.

The Biology department has had numerous discussions regarding SLO assessments, and instructors in the department complete assessments of their course and will continue to do so. Individual instructors have implemented changes based on their course assessments. In addition, SLOs are on every course syllabus/greensheet within the department.

Due to various factors (the delay in implementing eLumen, dialogue with our faculty association, nothing in the previous contract regarding SLO assessments, the changes in Program Review), there hasn't been a clear direction for the college regarding SLO assessments. This has made it difficult to implement strategies regarding SLO assessments .

That being said, the department fully supports the SLO process and is a part of our 3rd program goal mentioned above. Going forward, the department plans to have a more definitive and structured schedule for our faculty regarding SLO assessments so they can be useful for the entire department.

Dean/Manager Comments

The Biology department which includes Health and Nutrition showed strong enrollment growth during the pandemic. The ability for many students to take lab and lecture classes online without the hassle of getting to campus, worrying about class conflicts etc; and our faculty's ability to take on more students in each section saw a boom in enrollment numbers. With a return to campus we saw that flood of students wane, but with the new academic year (23-24) we are seeing the correction from the past couple of years and our numbers are going up again. Our Nutrition and Health classes which have no labs and have for the most part have continued to be offered online are showing strong enrollment.

One of the limiting factors in continued growth is the availability of full time faculty. Full time faculty can not only teach a full load of classes, but can also serve our students more strategically as we address the equity gaps in our courses. They would have the time to dive deeply into the data and commit to working with their peers in removing some of the obstacles that stand in our students' path to success.

The department also needs to update some of the classrooms as student demands have shifted over the years. We are seeing increased interest and enrollment in our Biology 6 series and in Biology 26. These classes are gate way classes as either part of the Biology majors series for transfer to 4-year institutions or as prerequisites for careers in health care including Nursing, Medical Laboratory Technologies, Dentistry etc. Both these courses require specialized micro labs. At present we only have a single lab room that satisfies the requirements needed to run these labs successfully. Being able to update another lab so it could also serve this function would be very beneficial to giving all students the optimal lab experience, grow our excellent reputation for science labs in the regions and attract and grow enrollment and more importantly success in our courses.

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.