

## Comprehensive Program Review

### A. Department Information

#### Mission

Please enter your department's mission statement here.

The engineering department mission statement is to provide students with a high-quality education in engineering, nurturing their passion for innovation and technology, through a dynamic and inclusive learning environment. We aim to equip our students with the knowledge and skills needed to excel in the field and contribute to the improvement of our community.

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 department's mission statement aligns with the college's mission and values by contributing to De Anza College's goal of challenging students from diverse backgrounds to develop their intellect and abilities. The department's focus on nurturing innovation and technology skills and preparing students to contribute to their community and the world directly supports the college's aim to produce socially responsible leaders. Both share a commitment to excellence, integrity, and community impact, making the engineering department's mission a vital component of the college's broader educational mission.

#### 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?
Promote Diversity and inclusion	Foster a welcoming and diverse learning environment to encourage participation from students of all backgrounds and promote equity in engineering education.	Department Faculty	Dean	Involve student in the villages	1)Enrollment data 2) Retention rates by demographics	1)Regularly analyze demographic data of the engineering students to monitor changes in the diversity and inclusion of the program. 2)Examine retention rates among students from underrepresented backgrounds and assess whether they are staying in the program at a rate comparable to their peers.
Enhance Transfer Opportunities	Facilitate a seamless transition for our engineering students to top-tier four-year institutions to further their education and career prospects.	Department faculty	Transfer Center, curriculum		1)Transfer rates 2)Student Surveys 3) Feedback from Transfer 4 years colleges	1)Track the number of engineering students successfully transferring to four-year institutions, including specific colleges or universities. 2)Conduct surveys to gauge students' awareness of transfer options and their satisfaction with transfer preparation resources. 3)Gather feedback from the receiving institutions about the preparedness and performance of De Anza engineering students.
Strengthen Practical Skills	Provide hands-on learning experiences through labs, projects, and internships, ensuring students develop the practical skills needed for success in the engineering field.	Department faculty			1)Lab and project performance 2) Internship placements 3) evaluate students in class project reports	1)Assess students' labs, projects, and practical assignments to ensure they are acquiring the necessary skills. 2) Monitor the number of engineering students securing internships and gather feedback from internship managers about De Anza students' performance. 3)Review student projects to evaluate the depth of their practical engineering skills.

#### 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.)

No current changes imposed.

### B. Enrollment Trends

#### Enrollment Variables and Trends

Enrollment Trends Physical Sciences/Math/Engin - Engineering-FD						
	2018-19	2019-20	2020-21	2021-22	2022-23	5-yr %Inc
Unduplicated Headcount	298	236	407	489	477	60.1%
Enrollment	319	258	457	545	514	61.1%
Sections	11	8	12	17	16	45.5%
WSCH	750	602	1,078	1,229	1,194	59.2%
FTES (end of term)	50	41	72	82	80	60.0%
FTEF (end of term)	1.7	1.2	1.9	2.6	2.5	43.9%
Productivity (WSCH/FTEF)	438	485	570	476	484	10.6%

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?

Offering classes with more hands-on experience, building a reputation for a high transfer rate to top four-year universities, and implementing college-level diversity and inclusion initiatives can indeed contribute to an increase in enrollment in the engineering department at De Anza College.

### 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.

1)The provided link did not offer any specific CTE programs tailored to the engineering department. Nevertheless, I looked into CTE offerings in the areas of "CIS (Computer Information Systems)" and "Design and Manufacturing". Within the CIS sector, a notable upward trend is evident for roles such as "software developers" and "software quality assurance analysts and testers". However, for the "Design and Manufacturing" sector, data indicates that there are no significant shifts in employment for the specified categories mentioned in this section. It's important to continuously monitor CTE programs to reflect changing demands and opportunities in the field, ensuring that students are well-prepared for successful careers.

2)Upon examining the information provided in the link, it is evident that industry trend is shifting towards the field of "software development."

### D. Course Success

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#### Course Success

Engineering-FD

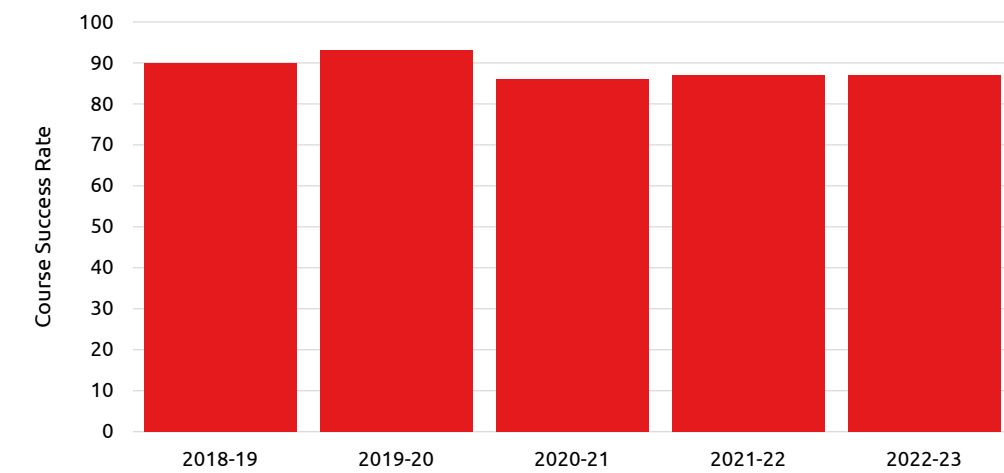
**Who uses this report:**

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
<b>Measures</b>	319	90%	287	258	93%	241	457	86%	391	545	87%	475	514	87%	446

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](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 success rate in the engineering department could include the following:

- The quality of instruction and the effectiveness of the engineering faculty play a vital role. Well-qualified and dedicated faculty, supported by up-to-date curriculum and resources, can greatly enhance student learning and success.
- The availability of practical, hands-on experiences, such as labs and projects, fosters a deeper understanding of engineering concepts.
- A supportive learning environment.
- Promoting diversity and inclusion initiatives ensures that all students, regardless of their background, feel welcome and empowered to excel in their engineering studies.
- Strong transfer agreements with four-year universities provide a clear pathway for students seeking to continue their engineering education.

2)

- Faculty Development through continuous training to ensure they remain up-to date with latest industry trends.
- Expand and improve our labs with hands-on experiences to offer students with more real-world engineering principles.
- Provide comprehensive student support services, including tutoring, counseling, to help students overcome academic challenges.
- Create a supportive and inclusive learning environment by promoting collaborative learning, faculty-students interaction, and student engagement in extra curricular activities, such as engineering clubs

3) I see the same trend in course success table

## 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<sup>1</sup>

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: 16

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 (Engineering-FD, 16 sections)	514	87%	87%	0		
Asian	252	90%	84%	+6		
Black	15	80%	87%	-7		2
Filipinx	23	74%	87%	-13		4
Latinx	106	79%	89%	-9		11
Native American	N/A					
Pacific Islander	N/A					
Unknown ethnicity	27	93%	86%	+6		
White	85	89%	86%	+3		
Female	108	88%	86%	+2		
Male	395	87%	87%	-1		4
Non-Binary	0					
Unknown gender	11	82%	87%	-5		1
Foster youth	N/A					
Individuals with disabilities	15	93%	87%	+7		
Low Income	176	81%	90%	-9		17
Not Low Income	338	90%	81%	+9		
Veterans	21	90%	87%	+4		

<sup>1</sup>The PPG-1 method follows the CCCC 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. The +6 for Asians indicates an increase in recognition, possibly reflecting a growing acknowledgment of their presence. Conversely, the negative values for Black (-7), Filipinx (-13), and Latinx (-9) communities suggest varying degrees of underrepresentation or challenges in visibility, with Filipinx showing the most substantial gap.
2. The provided numerical differences in ethnic representation are indicative of disparities. While the positive value for Asians reflects progress in acknowledgment, the negative values for Black, Filipinx, and Latinx communities reveal underrepresentation. These differences highlight the importance of targeted initiatives to promote equity, inclusivity, and equal opportunities for all ethnic groups, ensuring a more balanced and diverse representation.
3. A trend with a numerical value of -9 for "low income" reflects that communities with low income are facing significant challenges. Addressing this trend is essential to ensure equitable access to education for everyone.
4. I chose "individuals with disabilities" because I believe that offering the same educational opportunities to individuals with disabilities benefits them by promoting inclusivity, providing a level playing field for learning, and enabling them to develop the skills and knowledge needed to pursue their goals, contribute to society, and lead more independent and fulfilling lives.
5. By actively working to reduce these gaps and provide opportunities for all students, the department can better equip students with the knowledge and skills needed to excel in the field, contributing not only to their individual success but also to the improvement of the broader community. These efforts align with the mission of promoting innovation and technology while embracing diversity.

### 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)

-Personalized support, such as one-on-one mentoring or tutoring for struggling students.

-Providing clear and structured course materials.

-Regular monitoring of student progress and providing timely feedback and support are essential to ensure that every student has the opportunity to thrive and successfully complete their courses.

2) The teaching and learning strategies of personalized support, clear and structured course materials, and regular monitoring of student progress directly align with the engineering department's mission and goals. By providing one-on-one mentoring and tutoring, clear course materials, and continuous monitoring, the department ensures a high-quality education, promotes students' passion for innovation and technology, and fosters an inclusive and dynamic learning environment. These strategies equip students with the knowledge and skills required for excellence in the field and contribute to the enhancement of the community.

### Trends in Awards

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### Degrees and Certificates by Ethnicity

Engineering-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?

As a department we should work on more degrees and certificates in engineering.

### 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.

[object Object]

## Staffing Trends

### Faculty Workload

Faculty Workload						
Physical Sciences/Math/Engin - Engineering-FD						
	2018-19	2019-20	2020-21	2021-22	2022-23	5-yr %Inc
Full Time Load	0.0	0.0	0.0	0.0	0.0	
Full Time %	0.0%	0.0%	0.0%	0.0%	0.0%	
Part Time Load	1.7	1.2	1.9	2.6	2.5	44%
Part Time %	100.0%	100.0%	100.0%	100.0%	100.0%	0%
Total FTEF	1.7	1.2	1.9	2.6	2.5	44%

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?

There are no current faculty need. But engineering labs need a dedicated lab technician.

## 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 department will be taking more steps in analyzing SLOAC results and maybe rewrite some of the SLOs.

### Dean/Manager Comments

The assessment and analysis done by the faculty seems complete and done well.

**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.