2023 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

CURRENT YEAR: 2022-2023 **PROGRAM: ENGINEERING**
CLUSTER: STT **LAST YEAR CPPR COMPLETED: 2020-2021**
NEXT SCHEDULED CPPR: 2025-2026 **CURRENT DATE: 3/3/2023**

The Annual Program Planning Worksheet (APPW) is the process for:

- reviewing, analyzing and assessing programs on an annual basis
- documenting relevant program changes, trends, and plans for the upcoming year
- identifying program needs, if any, that will become part of the program's resource plan
- highlighting specific program accomplishments and updates since last year's APPW
- tracking progress on a Program Sustainability Plan if established previously

Note: Degrees and/or certificates for the ***same*** program ***may be consolidated*** into one APPW.

This APPW encompasses the following degrees and/or certificates:

- A.S. Engineering, A.S. Manufacturing, C.A. Manufacturing

GENERAL PROGRAM UPDATE

Describe significant changes, if any, to program mission, purpose or direction. *If there are not any, indicate: NONE.*

- There has been a change in engineering program staffing and leadership. Jeff Jones retired after 31 years as the lead faculty member. Dr. Alan Ross, tenured full time faculty who teaches part time in engineering, stepped into the role temporarily to lead the program and the hiring of a full time faculty member to replace Jeff. Dr. Elizabeth Adams was hired beginning fall 2022 as a full time faculty member in engineering. She is working closely with Dr. Ross to identify current program needs and to define the path moving forward under new leadership, and in response to changes resulting from the COVID pandemic.
- The Engineering degree will be revisited in 2023/2024 and revised to align with California C-ID model curriculum. The A.S. degree will be edited or deactivated and replaced with discipline specific degrees and certificates of achievement in:
    - Mechanical Aerospace and Manufacturing Engineering
    - Civil Engineering
    - Electrical Engineering, and
    - Computer Engineering
- The Manufacturing certificate and degree are in the process of being deactivated. Cuesta has not been able to obtain financial and industry support necessary to teach the required curriculum. The associated courses are also being deactivated (ENGR200,

ENGR205, and ENGR206L). Note that these courses do not significantly impact the engineering program's mission of preparing students to transfer within engineering, they are not transfer required (or desired) courses in any of the top engineering transfer disciplines.

Program Sustainability Plan Update

Was a Program Sustainability Plan established in your program's most recent Comprehensive Program Plan and Review?

Yes ☐ If yes, please complete the Program Sustainability Plan Progress Report below.
No ☒ If no, you do not need to complete a Progress Report.

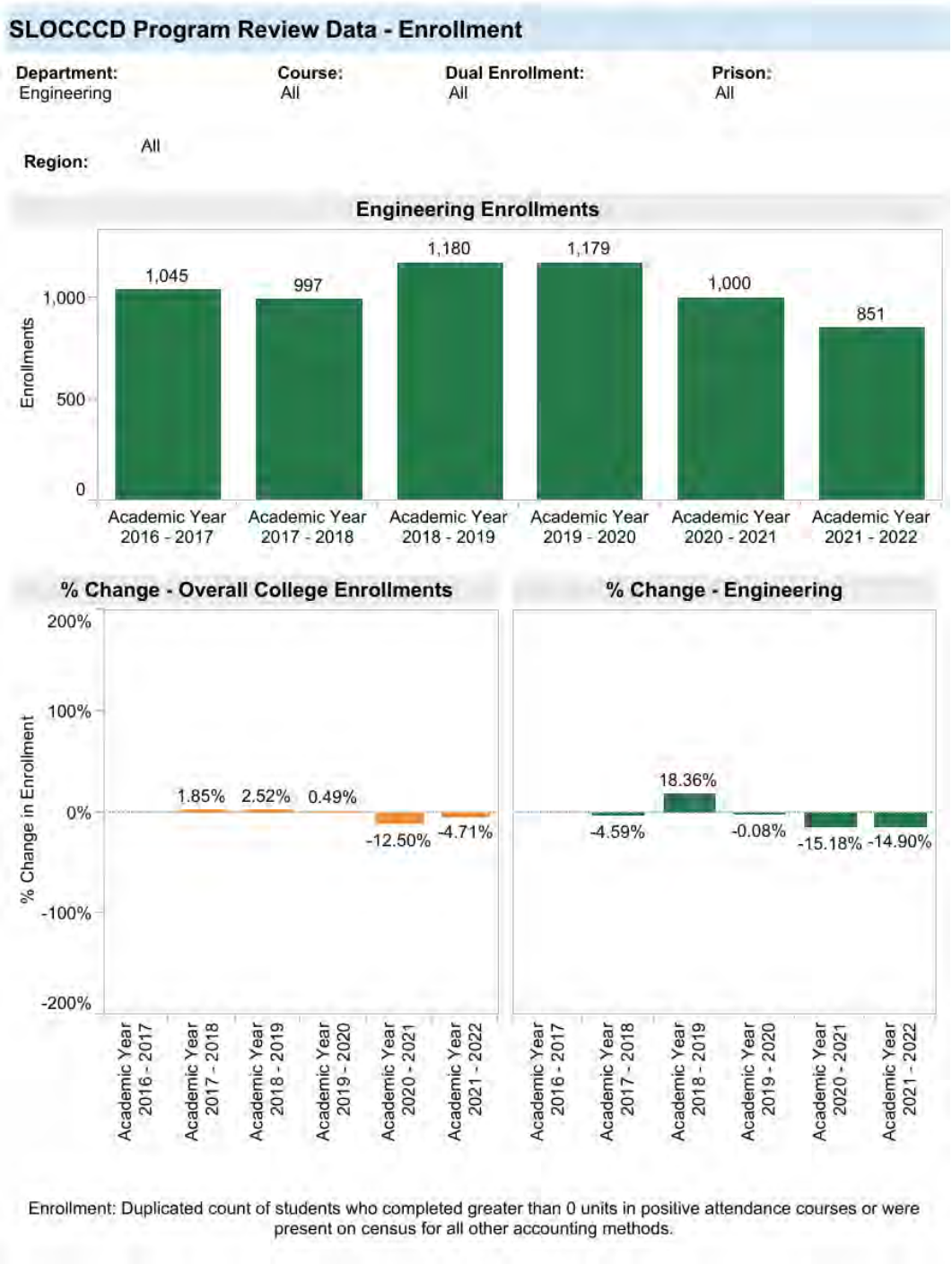
If you selected yes, please complete the Program Sustainability Plan Progress Report below after you complete the Data Analysis section. That data collection and analysis will help you to update, if necessary, your Program Sustainability Plan.

DATA ANALYSIS AND PROGRAM-SPECIFIC MEASUREMENTS

Your responses to the prompts for the data elements below should be for the entire program. If this APPW is for multiple degrees and/or certificates, then you MAY want to comment on each degree and/or certificate or discuss them holistically for the entire program being sure to highlight relevant trends for particular degrees and/or certificates if necessary. Responses in this document need only reference the most recent year's available data.

General Enrollment (Insert Aggregated Data Chart)

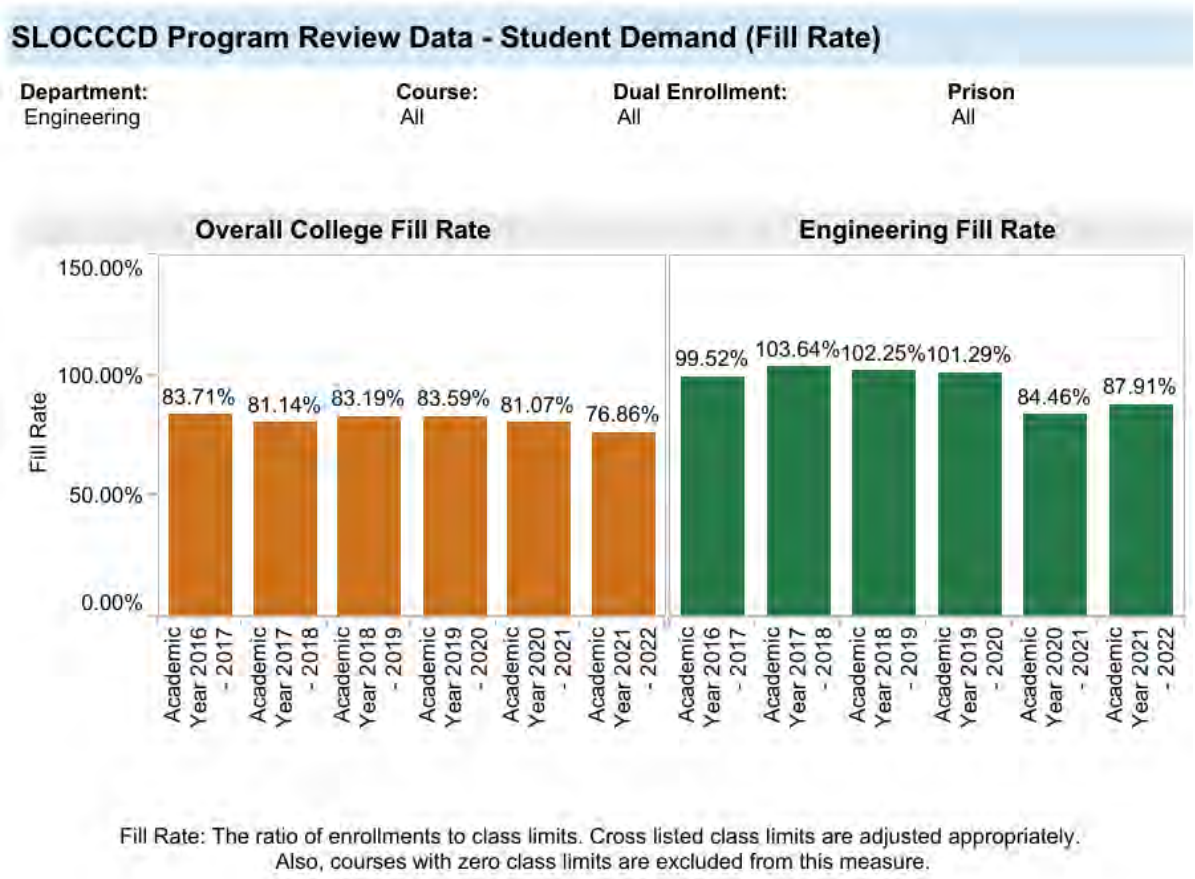
Insert the data chart and explain observed differences between the program and the college.



- The decreased enrollment numbers shown are reflective of both the COVID pandemic effect on hands-on engineering courses, and the program's recent change in full time staffing and leadership. We anticipate improved enrollment as the program works to find the right balance between in person and online instruction, and establishes a consistent course offering.

General Student Demand (Fill Rate) (Insert Aggregated Data Chart)

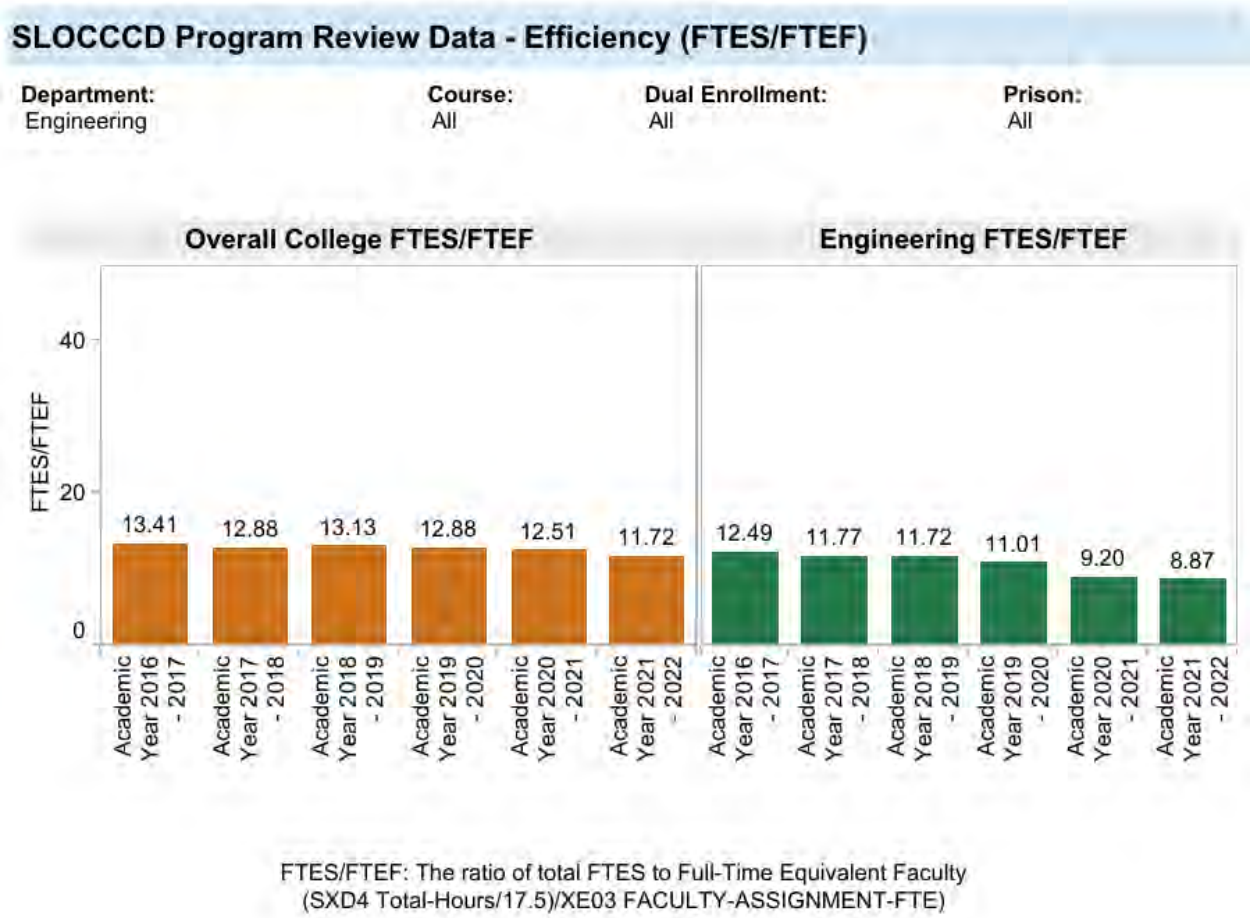
Insert the data chart and explain observed differences between the program and the college.



- Here again the numbers are reflective of both the COVID pandemic's effect, and the engineering program's recent change in full time staffing and leadership. We anticipate improved enrollment and fill rates as we find as we return to in person instruction while keeping suitable courses also available remotely, and establish a consistent course offering for fall, spring and summer sessions.

General Efficiency (FTES/FTEF) (Insert Aggregated Data Chart)

Insert the data chart and explain observed differences between the program and the college.



- Most engineering courses have limited enrollment (18 to 28 students) because of laboratories and available lab equipment. This class size limit is reflected in the FTES/FTEF ratios being consistently less than those for the overall college, and fluctuating with overall college enrollments. We anticipate an increase in this efficiency metric as we continue to recover from COVID pandemic reduced enrollment.

Student Success—Course Completion by Modality (Insert Data Chart)

Insert the data chart and explain observed differences between the program and the college.

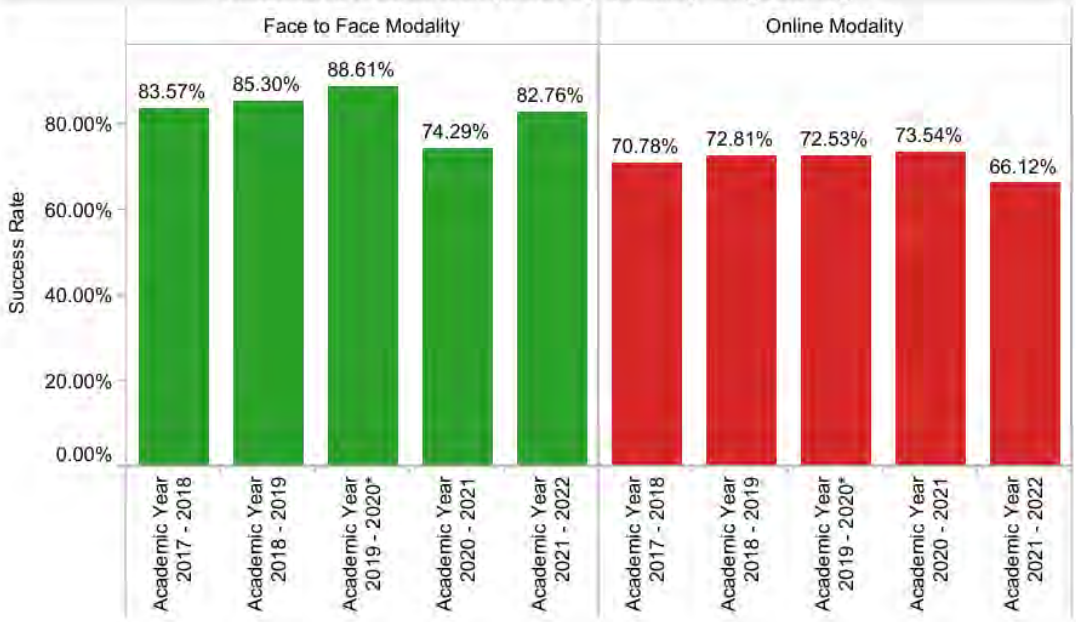
SLOCCCD Program Review Data: Successful Course Completion

Select Department: Engineering

Course: All

Legend: Face to Face Modality, Online Modality

Successful Course Competion by Modality -Engineering



Successful Course Competion by Modality Table - Engineering

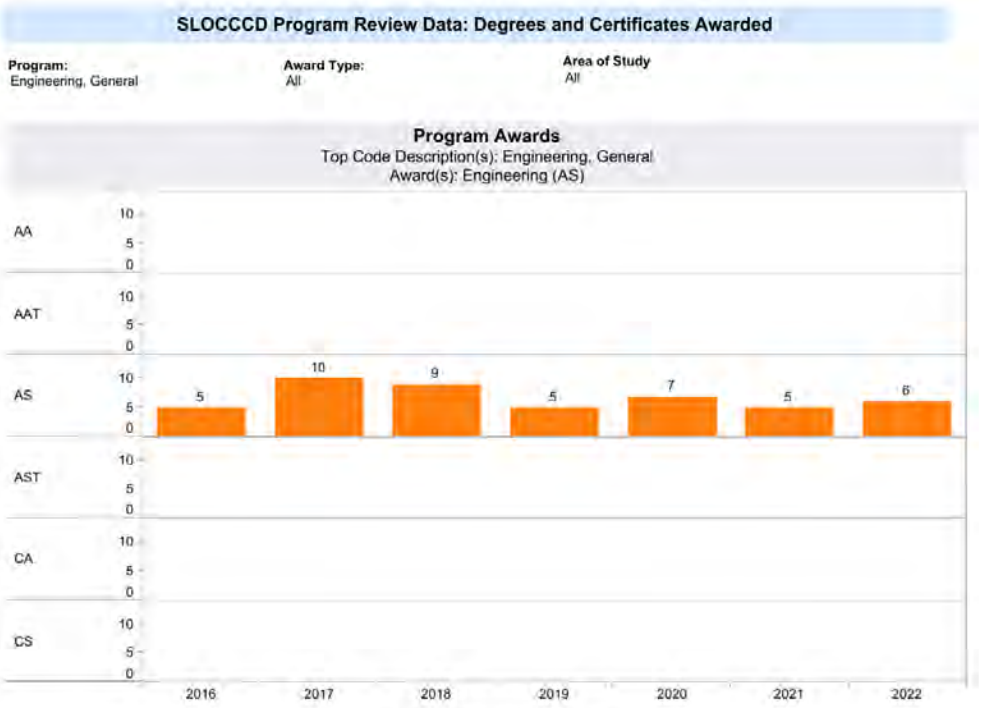
		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022
Face to Face Modality	Department Success Rate	83.57%	85.30%	88.61%	74.29%	82.76%
	Total Department Enrollments	487.0	551.0	588.0	140.0	487.0
Online Modality	Department Success Rate	70.78%	72.81%	72.53%	73.54%	66.12%
	Total Department Enrollments	510.0	629.0	592.0	860.0	366.0

- Engineering face to face classes success rates are higher than the college average (82.76% versus 2021-2022 face to face college average of 79.29%).
- However, online engineering classes have notably worse success rates than online courses for the college on average (66.12% versus 2021-2022 online college average 71.93%).
- This is illustrative of the benefits of in person instruction for engineering courses. Many of the courses include project based and “hands-on” learning activities which are difficult to recreate remotely. Further, as the course work becomes more challenging as students get closer to transfer the material lends itself to increased learning opportunities through group work and collaboration among students.

- The engineering program is working to bring courses back to campus. For example, Dr. Adams who is teaching full time in engineering has offered 100% of her classes in person.
- We will work to improve success rates in online courses as well, by working to understand which classes are best suited for remote delivery and keeping the instruction materials current and relevant.

Degrees and Certificates Awarded (Insert Data Chart)

Insert the data chart and explain observed differences between the program and the college.



Program Awards Table

Award Type	Award	2016	2017	2018	2019	2020	2021	2022
AS	Engineering (AS)	5	10	9	5	7	5	6
	Total	5	10	9	5	7	5	6
Grand Total		5	10	9	5	7	5	6

Program Awards: The number of degress and certificates awarded by program type

- The number of Engineering Degrees awarded is slowly recovering from the COVID downturn.
- In order to improve this metric, the Engineering AS degree will be revisited in 2023/2024 and revised to align with California C-ID model curriculum. The A.S. degree will be deactivated and replaced with discipline specific degrees and certificates of achievement in:
    - Mechanical Aerospace and Manufacturing Engineering

- Civil Engineering
- Electrical Engineering, and
- Computer Engineering

General Student Success – Course Completion (Insert Aggregated Data Chart)

Review the Disaggregated Student Success charts; include any charts that you will reference. Describe any departmental or pedagogical outcomes that have occurred as a result of programmatic discussion regarding the data presented

SLOCCCD Program Review Data: Successful Course Completion

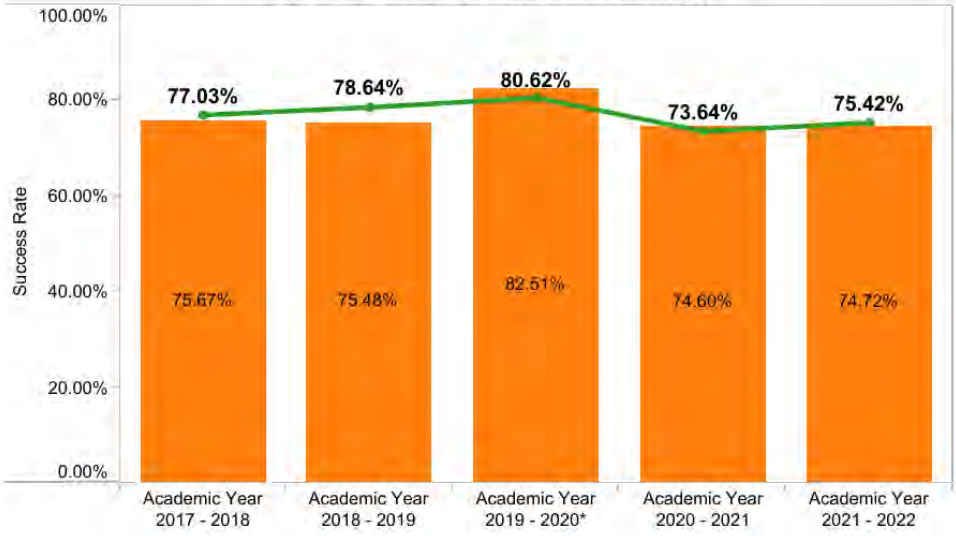
Select Department: Engineering

TERM All

COURSE All

Measure Names
- Department Success Rate
- Overall College Success Rate

Successful Course Completion - Engineering

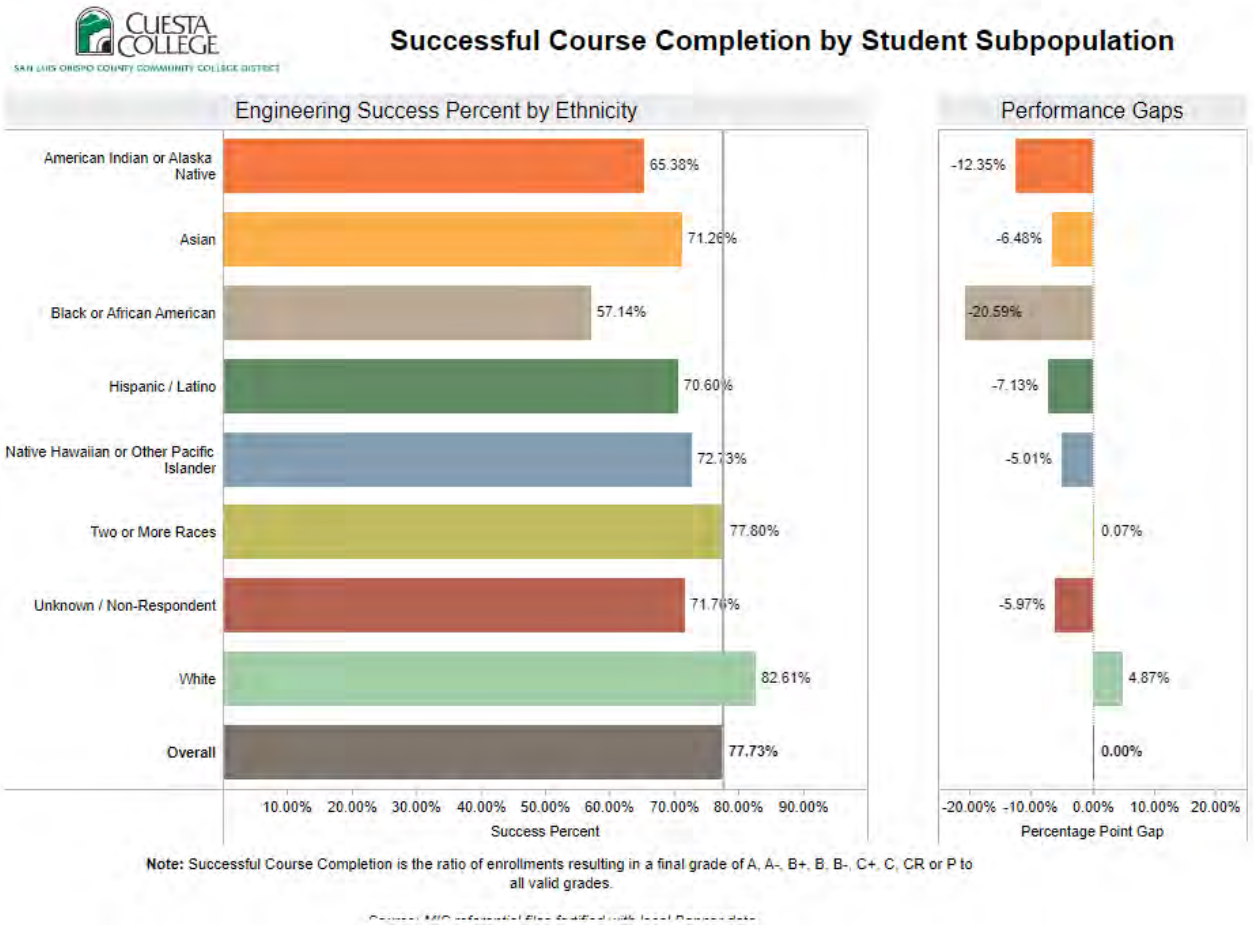


Engineering Success Rate Table

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022
Department Success..	77.03%	78.64%	80.62%	73.64%	75.42%
Total Enrollments	997	1,180	1,180	1,000	853

- Referring to the above table, student completion rates appear to be in alignment with the rest of the college.
- The table below shows disaggregated student success by ethnicity. There are performance gaps in all identified ethnicity categories (except for the "two or more races"). As an HSI, the Cuesta College engineering department is committed to understanding how to best serve historically underrepresented student populations. We

will continue to investigate the causes of these gaps and work to narrow/eliminate them as we continue to recover from the pandemic and create a stronger on-campus community.



OTHER RELEVANT PROGRAM DATA (OPTIONAL)

Provide and comment on any other data that is relevant to your program such as state or national certification/licensure exam results, employment data, etc. If necessary, describe origin and/or data collection methods used.

PROGRAM OUTCOMES ASSESSMENT CHECKLIST AND NARRATIVE

CHECKLIST:

☒ SLO assessment cycle calendar is up to date.

☐ All courses scheduled for assessment have been assessed in eLumen.

☐ Program Sustainability Plan progress report completed (if applicable).

NARRATIVE:

Briefly describe program changes, if any, which have been implemented in the previous year as

a direct result of the Program or Student Services Learning Outcomes Assessment. *If no program changes have been made as results of Program or Student Services Learning Outcomes Assessment, indicate: NONE.*

- SLO Assessments in eLumen were last completed prior to the engineering program review in 2021.
- A new assessment schedule has been developed as a result of Dr. Adams joining Cuesta.
- The next round of SLO assessments is scheduled for Fall 2023 for all ENGR classes. SLOAs will be completed every fall semester thereafter as there are no spring only course offerings within the program.

PROGRAM PLANNING / FORECASTING FOR THE NEXT ACADEMIC YEAR

Briefly describe any program plans for the upcoming academic year. These may include but are not limited to the following: *(Note: you do not need to respond to each of the items below)*. *If there are no forecasted plans for the program, for the upcoming year, indicate: NONE.*

A. New or modified plans for achieving program-learning outcomes
B. Anticipated changes in curriculum, scheduling or delivery modality
C. Levels, delivery or types of services
D. Facilities changes
E. Staffing projections
F. Other

- Dr. Elizabeth Adams has replaced Jeff Jones as the engineering program lead.
- Current initiatives for the engineering program include:
    - Restructuring of the Engineering A.S. Degree requirements;
    - Investigating the correct balance of online and in person course offerings, and improving online student success rates;
    - Acknowledging as a program the equity gaps in student success so that we can begin to work towards narrowing and eliminating those gaps;
    - Assessing material and facility resource needs and exploring funding options to meet the needs.

PROGRAM SUSTAINABILITY PLAN PROGRESS REPORT

This section only needs to be completed if a program has an existing Program Sustainability Plan. Indicate whether objectives established in your Program Sustainability Plan have been addressed or not, and if improvement targets have been met.

Area of Decline or Challenge	**Identified Objective (Paste from PSP)**	**Planning Steps (Check all that apply)**	**Has the Improvement Target Been Met?**
Enrollment		☐ Identified ☐ Resources Allocated ☐ Implemented	Select one
Student Demand (Fill Rate)		☐ Identified ☐ Resources Allocated ☐ Implemented	Select one
Efficiency (FTES/FTEF)		☐ Identified ☐ Resources Allocated ☐ Implemented	Select one
Student Success – Course Completion		☐ Identified ☐ Resources Allocated ☐ Implemented	Select one
Student Success — Course Modality		☐ Identified ☐ Resources Allocated ☐ Implemented	Select one
Degrees and Certificates Awarded		☐ Identified ☐ Resources Allocated ☐ Implemented	Select one

If Program Sustainability Plan is still necessary, provide a brief description of how you plan to continue your PSP and update your PSP to remove any objectives that have been addressed and include any new objectives that are needed.