2021 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

CURRENT YEAR: 2021 **PROGRAM: CHEMISTRY**
CLUSTER: ARTS, HUMANITIES, MATH, & SCIENCES **LAST YEAR CPPR COMPLETED: 2019**
NEXT SCHEDULED CPPR: 2024 **CURRENT DATE: 2/24/2021**

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:
AS-Chemistry, CA-Premedical Studies

GENERAL PROGRAM UPDATE

Describe significant changes, if any, to program mission, purpose or direction. *If there are not any, indicate: NONE.*
The only significant change is that many courses are being taught virtually due to COVID; this isn't a permanent change to the program. The official name of CHEM 210FL has changed to CHEM 200.

PROGRAM SUSTAINABILITY PLAN UPDATE

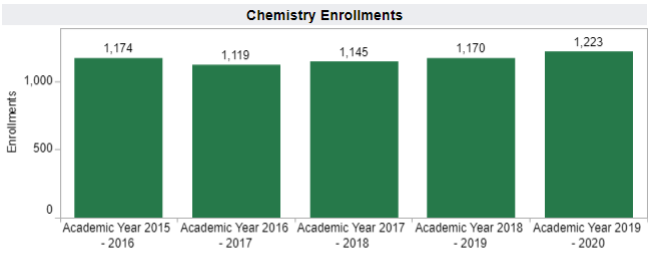
Was a Program Sustainability Plan established in your program's most recent Comprehensive Program Plan and Review?

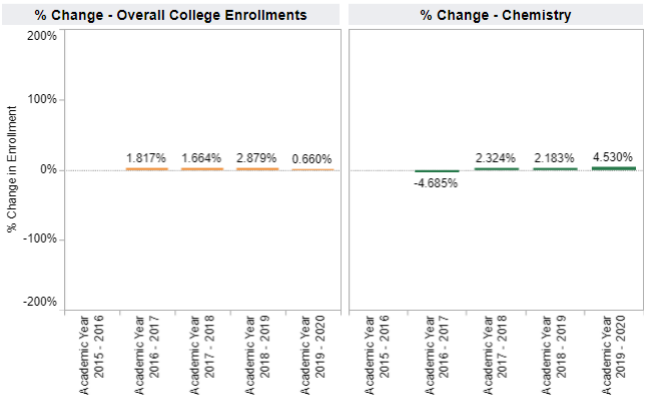
Yes ☐ If yes, please complete the Program Sustainability Plan Progress Report below.
No ☒ If no, you do not need to complete a Progress Report.

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

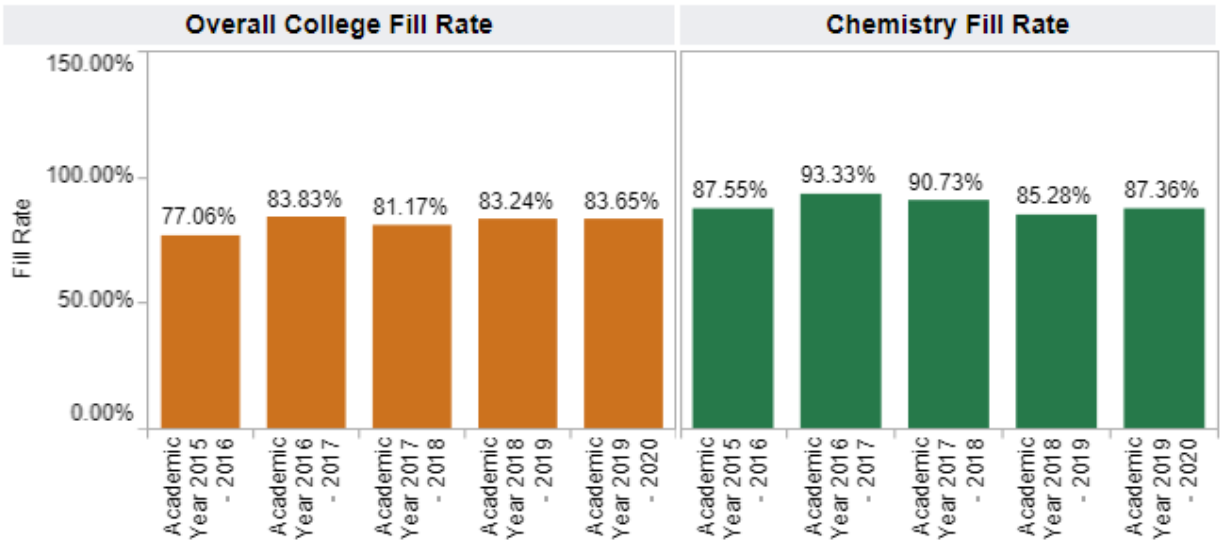
Your responses to the prompts for the data elements below should be for the entire program. If this APPW is for multiple degrees and/or certificates, then you MAY want to comment on each degree and/or certificate or discuss them holistically for the entire program being sure to highlight relevant trends 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)





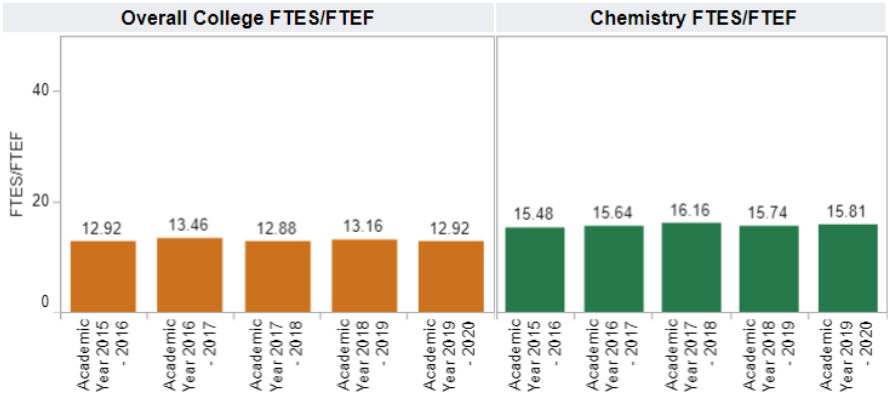
Chemistry enrollment has steadily increased since the low noted in the 2018 APPW document. This steady increase could be attributed to more sections available at a variety of times due to the addition of two new FT faculty and an adjunct faculty member to teach labs. While some faculty in chemistry have significant reassign time, it does not appear it has affected enrollment.

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



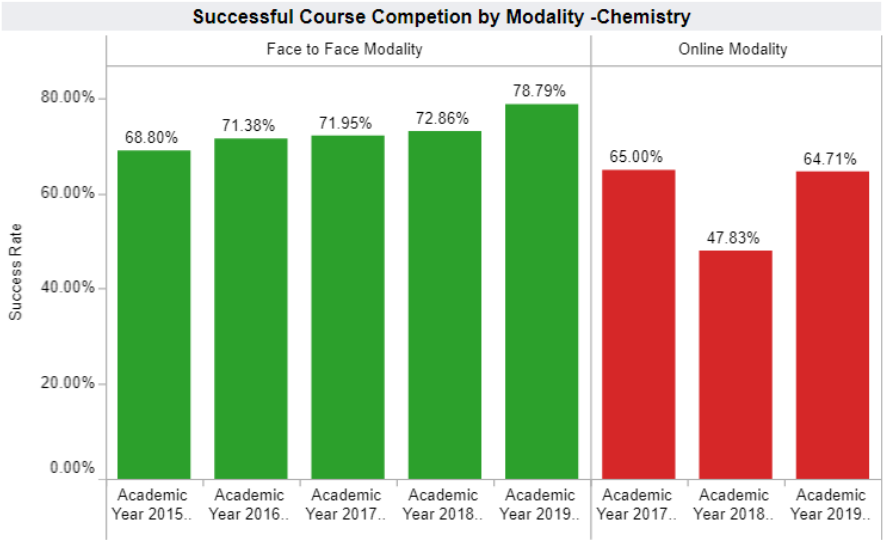
Chemistry's fill rate follows a similar trajectory as the college's course fill rate. However, chemistry's fill rate is higher than the college average, likely due to continued effective management of section offerings.

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



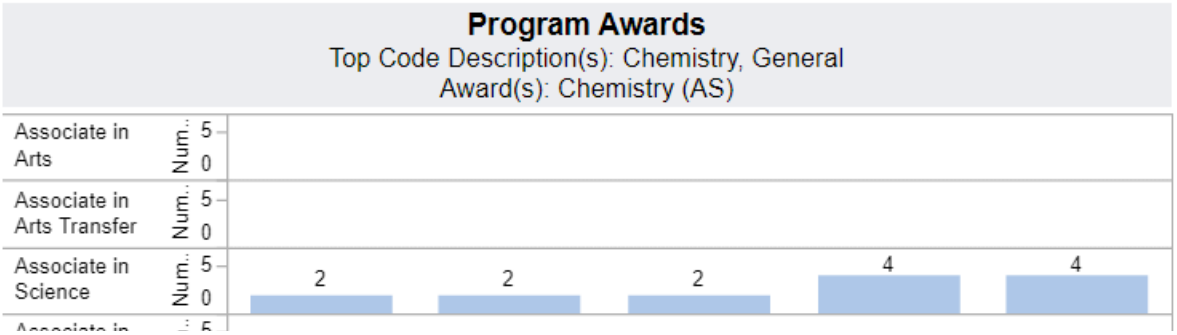
Chemistry's efficiency has remained steady since the last APPW, and still is well above the college efficiency average and target of 15.0. The higher efficiency is due in part to the combination of labs into large lecture sections and the lower loading for lab time.

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



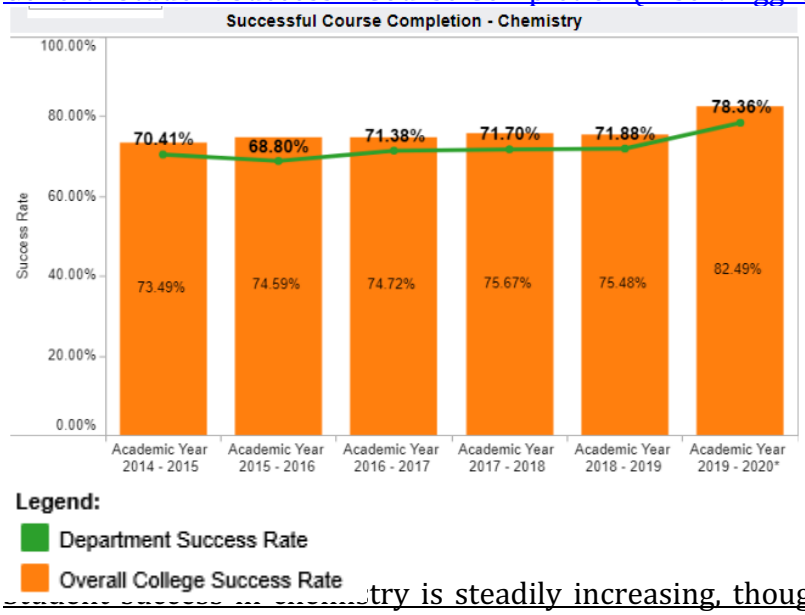
It is challenging to make any comparison between modalities yet because the only courses that were offered fully online before Spring 2020 were single sections of CHEM 201A and CHEM201P. It will be hard to compare data for our next APPW as well since much of our data will be primarily for the online modality.

Degrees and Certificates Awarded (Insert Data Chart)



We primarily offer service courses (most of our students aren't majors) so it makes sense that our awarded degree totals are rather low. While an ADT in chemistry would be beneficial, the current unit totals in courses outside of our department (and division) will not allow for it. There is talk at the state level of increasing transferability to the UCs and CSUs from the community colleges which will hopefully lead to changes in unit requirements and allow us to offer some version of an ADT (or what the new iteration would be called).

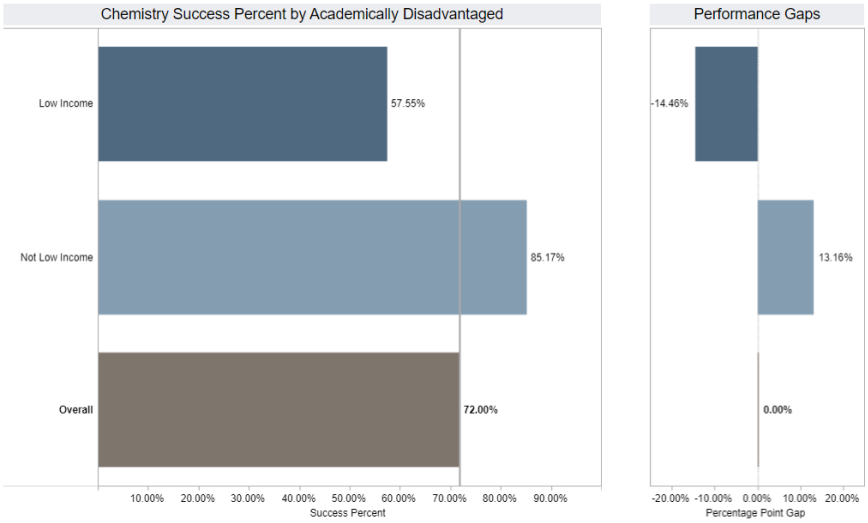
General Student Success – Course Completion (Insert Aggregated Data Chart)



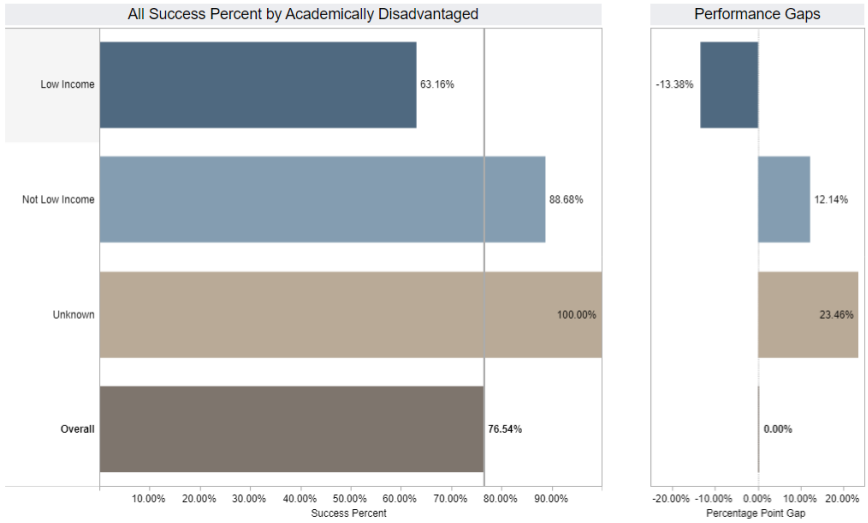
Student success in chemistry is steadily increasing, though is still lower than the overall college values. Chemistry in a challenging course so a lower success rate is not uncommon in institutions statewide. The large % jump from 2018-2019 to 2019-2020 is likely due to the grading policy change for Spring 2020 semester, where grades of F and W after were automatically converted to excused withdraw (EW), which influences our success rate data.

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.

Chemistry Department Success Rates Disaggregated by income status



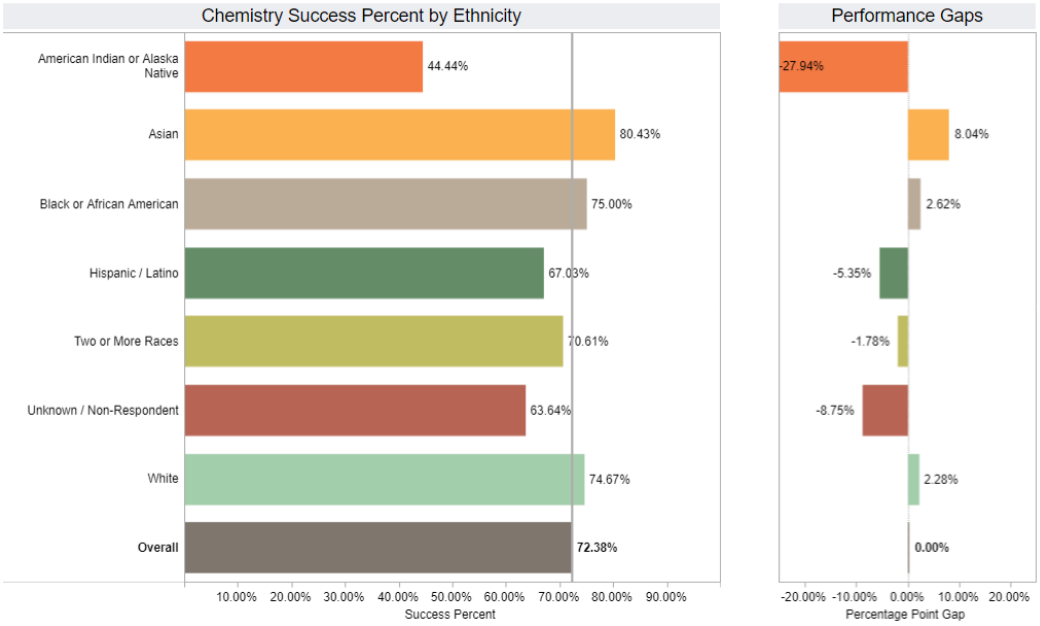
College Success Rates Disaggregated by income status



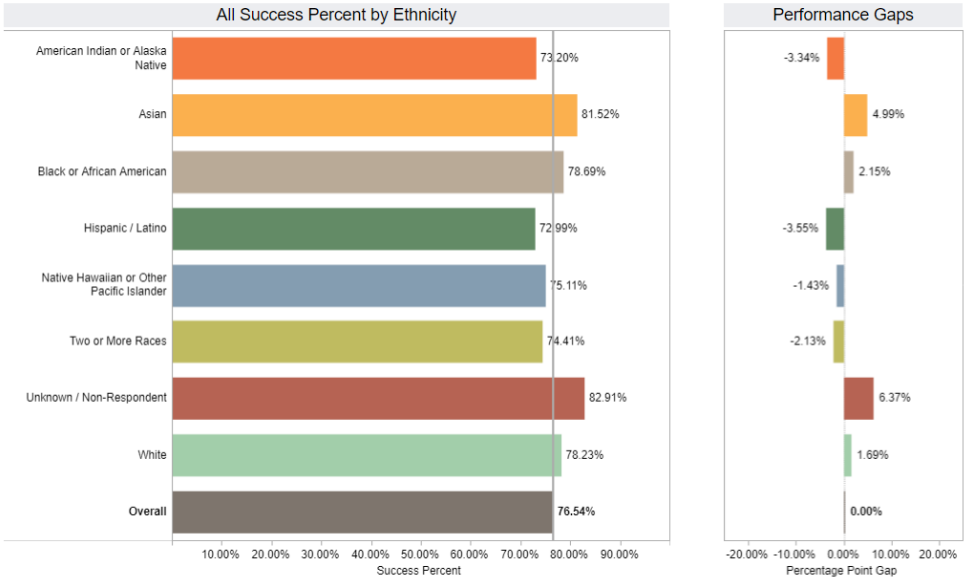
Low income students have a larger equity gap in chemistry than in college-wide totals by a small amount. This could be due to economic barriers of higher cost textbooks and the necessity of chemistry students to attend labs, which take more time than lecture, and may reduce students' abilities to work enough hours at their jobs to support themselves.

Faculty have been exploring low- and no-cost alternatives to textbooks and homework systems. A concern that arises with open-source materials is the effect of non-state vetted resources on the transferability of our high-population courses. We don't want to switch to a low/no cost alternative if it will affect the possibility of 4-year institutions accepting the coursework for transfer. It may be useful to examine culturally responsive teaching so that lower income students can see themselves attaining science degrees. Discussing homework and attendance policies may help reduce the impact of the extended lab times for working students.

Chemistry Department Success Rates Disaggregated by Ethnicity



College Success Rates Disaggregated by Ethnicity

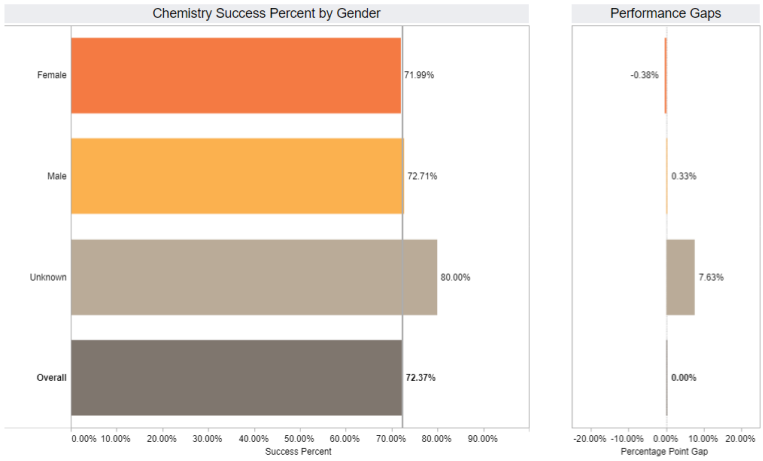


Students who identify as Hispanic/Latino, two or more races, and unknown are negatively disproportionally impacted in the chemistry department compared to other ethnicities. This impact is greater in the chemistry department than college-wide. From what has been discussed college-wide, the populations of students in the other minoritized groups are too small to be able to assess the significance of the gaps (for example, the American Indian/Alaskan native population was a total of 27 students over a 5-year period). To be clear: we are concerned there are success gaps within these populations; it is unclear how representative the data is of the true gap – whether it's larger or smaller.

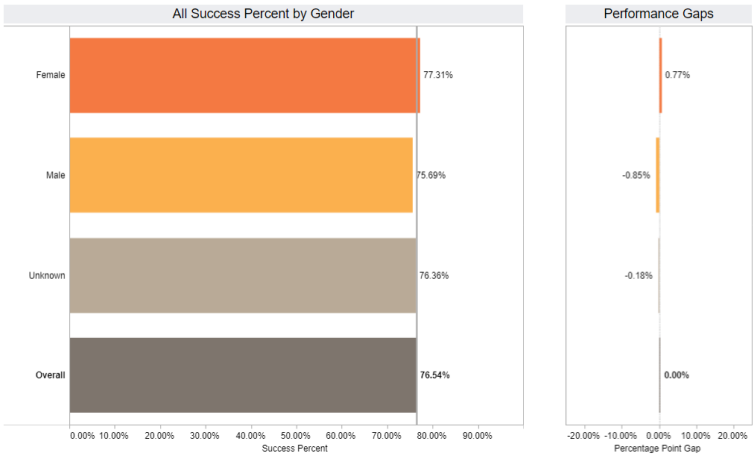
Chemistry has begun to discuss equity in our courses and is dedicated to decreasing these equity gaps. With the advent of the data coaching program and the ease of availability of data, an equity discussion with all of the disaggregated data and a data coach will happen in the next 8 months.

Several faculty in the department have undergone extensive equity training and will be sharing what they've learned with the wider department so everyone can make changes to their courses to hopefully narrow each of our gaps and have more equitable classroom environments.

Chemistry Department Success Rates Disaggregated by Gender Identification



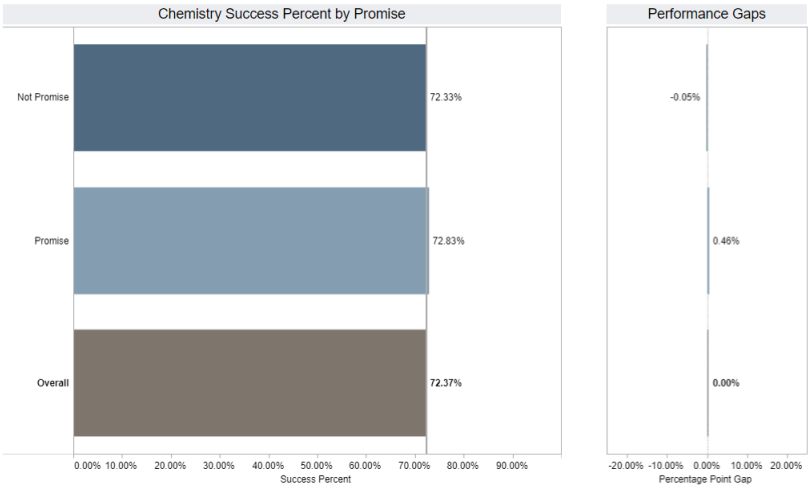
College Success Rates Disaggregated by Gender Identification



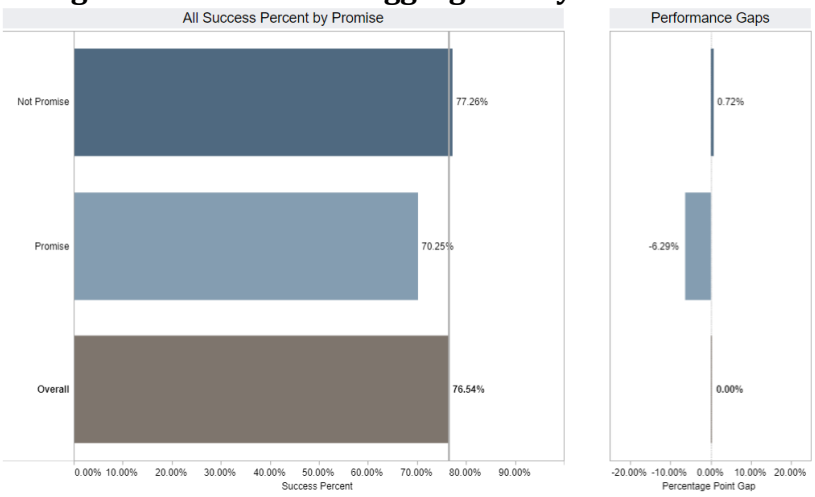
There is a very small gap between those students who identify as female and students who identify as male, as well as an unusually large gap in "unknown", which may mean those students who do not identify with male nor female or those who declined to state. The gap in the department is smaller than the gap at the college-level.

It's interesting to note that there has been a majority female-identifying students in chemistry courses since the Spring 2017 semester. There is also a sign inversion of the success gap in academic year 2016-2017 for female-identifying and male-identifying students that has persisted every academic year since.

Chemistry Department Success Rates Disaggregated by Promise



College Success Rates Disaggregated by Promise



Chemistry has seen similar success between those students that are on The Cuesta Promise and those that aren't. This is significantly different than seen overall at the college, where there is a fairly large success gap for its Promise students.

Our department offers a number of resources for our students, including the FAL program for Introductory Chemistry students (CHEM 200), CHEM 201P, which is a bridge course from introductory or high school chemistry, and CHEM 201AX and BX for those students enrolled in general chemistry. It could be that this cadre of support programs and courses offered by our department helps those Promise students (that may have been underprepared when entering college) to succeed in the early chemistry sequence to the same extent as those not on the Promise scholarship.

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.*

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.*

- B/C Course Delivery:
    - Since March in the Spring 2020 semester, delivery of the majority of our courses have been taught as distance education (DE) due to the pandemic. The majority of our courses in the 2020-2021 academic year have been offered 100% DE, with the exception of CHEM 212A and B, which have had some in-person laboratories. The goal for the coming academic year is to try to introduce more in-person work but it will depend on the state of cases in the county and the pandemic country-wide. There has been some discussion that certain lecture aspects of course will remain DE and certain activities from virtual labs could be incorporated into the in-person laboratory.
- B/C Scheduling
    - CHEM 201P was not offered in Spring 2021 and CHEM 201B will not be offered in Summer 2021.
- B/C/D Facilities
    - Facilities have not been an issue for class scheduling due to the primarily online delivery.
    - There have been some changes to door keying and key availability policies on

campus that are making access to certain lab spaces challenging and inconvenient.
    - We have since gotten a new copier/printer/scanner that has been working very well.
    - After a temporary relocation to 6600 for a remodeling project in 2019-2020, faculty have returned to the renovated 2300 office building. A conference room has been restored (and two full-time faculty have FULL SIZE OFFICES!!) and the hope is to make this a student space. One issue is security in that the doors to the offices do not seem to close and latch securely
- E Staffing
    - A new full-time faculty member was hired in Fall 2018.
    - A new adjunct faculty member was added in Fall 2019 with a primary assignment in teaching CHEM 201A laboratories.

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

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.

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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

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