Chemistry Program Review

Rubric Evaluation

A. Program Information

	Shaelyn St Ong Cole (Same Division Faculty)	David McCormick (At-Large Faculty)	Ram Subrmaniam (Dean)	Joshua Pelletier (At-Large Classified Staff)
How many criteria are met for the Program Mission statement?	Exceeds expectations for all 8 criteria - Excellent	Addresses 4 to 7 of the criteria - Needs Some Improvement to Meet the Standard	Addresses all 8 criteria - Meets the Standard	Addresses all 8 criteria - Meets the Standard
Reader Feedback	N/A	Good work overall on this mission statement. For possible improvements, I recommend placing the name of your department (Chemistry) in the first sentence of your program's mission statement. This will make it more clear. I would also recommend using complete sentences in your mission statement by adding something in the beginning of each of the first two sentences, including key words such as "purpose," "mission," and so on. This would clarify your department's purpose(s). Maybe add a bit more descriptive language (a few adjectives, for example) regarding the nature of your lectures and lab classes? This could make the pedagogical focus and activities of your program more concrete in the minds of readers.	N/A	Program Mission statement is clear, concise, and addresses all 8 criteria.
How many criteria are met for the Program Learning Outcomes?	Exceeds expectations for all 5 criteria - Excellent	Addresses 3 to 4 of the criteria - Needs Some Improvement to Meet the Standard	Addresses all 5 criteria - Meets the Standard	Addresses 3 to 4 of the criteria - Needs Some Improvement to Meet the Standard

| Reader Feedback | N/A | Well done overall, but I recommend stating the name of your department (Chemistry) as part an introductory sentence for your program learning outcomes (PLOs). (To be clear, my background is in English, hence the focus on language and clarity.) Also, your PLOs don't explicitly include any mentioning of students, so I would recommend using sentences which make students the focus/subject of each of your PLOs. This would make them more student-centered. I also suggest finding ways to show how your PLOs "reflect levels of learning...[by] building towards higher order thinking skills," which is another of the main criteria for PLOs. | N/A | The four PLOs listed are measurable and actionable; to an extent, they reflect levels of learning, too. The language can focus more on the students; also, the PLOs can be described in a sequence that reflects the different levels of learning and that illustrates how each PLO supports and leads to the next. "Handling chemicals safely" may, for example, precede "communicating using the language of chemistry" in both degree of difficulty and order of operations. |

B. FTES - Enrollment Trends

1. What does the FTES data trend indicate?	FTES has decreased over the time span no more than 10% - Meets the Standard	FTES has decreased over the time span by 10% to 30% - Needs Some Improvement to Meet the Standard	FTES has decreased over the time span no more than 10% - Meets the Standard	FTES has decreased over the time span no more than 10% - Meets the Standard
How many criteria are met in the data trend narrative explanation for FTES?	The narrative includes all 4 of the criteria - Meets the Standard	The narrative includes 3 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 4 of the criteria - Meets the Standard	The narrative includes fewer than 3 of the criteria - Needs Major Improvement to Meet the Standard
How many criteria are met in the proposed action narrative for FTES?	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard

| Reader Feedback | Only middle college enrollment was addressed, not enrollment within the main college | On my copy of the program review rubric, I indicated that the Chemistry Department "needs some improvement to meet the standard" regarding FTES enrollment trends, as -10.3% is in fact a tiny fraction more than what qualifies as meeting the standard. (Note to program review supervisors: It might be more accurate to call a percentage such as -10.3% "borderline" in terms of meeting the standard for FTES.) Although I understand what was explained about how the Chemistry Department's FTES is tied to that of other departments in STEM fields at Foothill, and that scheduling among departments may be part of the reason for the downward trend in FTES, it might be more compelling (and in line with the rubric's criteria) if your narrative explored some other factors potentially related to areas for improvement which would be within your department's control, such as the extent to which you maintain culturally relevant pedagogy and/or curriculum, keep your curriculum and course materials current and relevant, and continue to engage students through the modalities instructors use when teaching your courses. The narrative on actions that could be taken to improve FTES does a nice job of outlining ways in which some changes to how and where classes are offered and delivered could potentially improve FTES for the Chemistry Department. Perhaps some of those general points could also be raised in the section on reasons for the trend itself? The section on proposed actions to improve FTES could more strongly meet the requirements of the rubric if there were more direct references to data, and also explanations of how the improvements based on proposed actions would be measured (or measurable). | The only thing I would add is the schedule coordination- especially lab blocks with Biology. Possibly Physics as well. | The narrative explanation does not demonstrate an understanding of the trend beyond Chemistry's described status as a "service department" for other departments and potential scheduling problems. The explanation for the decline in enrollment does not appear to be within the department's control. And the decline in enrollment is not described in the context of the program's size. While offering dual enrollment sections may increase FTES, this action is not currently supported or informed by data. FTES from dual enrollment classes and matriculation data seem to be valuable supports, here. Additionally, no data is presented to support the proposition that coordinated scheduling would increase FTES in Chemistry classes. There is also no data presented to support the proposition that hybrid offerings, online supplemental instruction, and alternative course delivery designs are possibilities to increase FTES. Have these course delivery changes made a difference in other Foothill departments? |

C. Sections - Enrollment Trends

How many criteria are met in the data trend narrative explanation for sections?	The narrative includes 3 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes fewer than 3 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes all 4 of the criteria - Meets the Standard	The narrative includes 3 of the criteria - Needs Some Improvement to Meet the Standard
How many criteria are met in the narrative explaining why the number of sections increased while FTES decreased?	The narrative is not included	The narrative is not included	The narrative includes all 3 of the criteria - Meets the Standard	The narrative is not included
Reader Feedback	Reasons within the departments control was not addressed, only reasons within admin control	The point is clear about how the college's push toward productivity may account (in part) for the decrease over five years in the number of course sections. However, in explaining the tangible reasons for this trend in particular, this reader is not sure how relevant it is to point out that "the 5-yr decrease in sections of -5% does not reconcile with a simultaneous -10% decrease in FTES and an increase in productivity." It might be more compelling if your narrative response at least explored some other factors potentially related to causes for the decline in sections, such as instructional modalities and courses offered in the program and how these have adapted to meet students' needs in terms of relevant labor market trends and so on.	N/A	N/A

D. Productivity - Enrollment Trends

1. What does the data indicate about the productivity trend?	The program productivity trend has increased - Excellent	The program productivity trend has increased - Excellent	The program productivity trend has increased - Excellent	The program productivity trend has increased - Excellent
How many criteria are met in the data trend narrative explanation for productivity?	The narrative exceeds expectations – the narrative could be used as an exemplar - Excellent	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard
How many criteria are met in the proposed action narrative for productivity?	The narrative is not included	The narrative is not included	The narrative includes all 5 of the criteria - Meets the Standard	The narrative is not included

Reader Feedback	N/A	In your narrative of why the Chemistry Department's productivity has increased, you clearly explain how this has been influenced by the administrations push toward productivity. However, it seems there is more room for exploring other factors -- ones within the control or influence of your department itself - that might also form part of the reason for this positive trend in productivity. For instance, you might want to elaborate more on ways that your department has been " building a more student-center schedule" and how this has possibly played a role in helping increase productivity.	N/A	N/A

E. Enrollment by Student Demographics

2. Does your program differ in the percentage of males to females, in this most recent year, compared to the College? (College 2018-19 = 52% Female, 48% Male)	The difference between the genders/sex is less than or equal 10% - Excellent	The difference between the gender/sex is between 11% to 20% - Meets the Standard	The difference between the gender/sex is between 11% to 20% - Meets the Standard	The difference between the genders/sex is less than or equal 10% - Excellent
How many criteria are met in the data trend narrative explanation for enrollment by gender?	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard
How many criteria are met in the proposed action narrative for enrollment by gender?	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 5 of the criteria - Meets the Standard	The narrative is not included
Data Table for Enrollment by Gender of Declared Majors https://foothill.edu//programreview/prg-rev-docs/fh-programreview2019_20enroll-by-gender-and-declared-major.pdf (https://foothill.edu//programreview/prg-rev-docs/fh-programreview2019_20enroll-by-gender-and-declared-major.pdf)				
3. What does the data trend indicate about enrollment (headcount) by gender of declared majors in the program?	The Gender gap by declared major is between 11% and 20% - Meets the Standard	The Gender gap by declared major is between 11% and 20% - Meets the Standard	The Gender gap by declared major is between 11% and 20% - Meets the Standard	The Gender gap by declared major is between 0% and 10% - Excellent

Reader Feedback	With few exceptions there is a decrease in female enrollment	I may be misreading or misunderstanding some things in the data and trends on enrollment by gender, but it seems to me that what the narrative on the change in male or female enrollment states about how "female enrollment is up 4%, while male registration is down the corresponding 4%. We do not see this as a significant change over four years" overlooks the fact that this represents an 8% increase in the gap between the number of male and female students enrolled in Chemistry courses over the five-year period, resulting in growth of the gap from 9% to 17%. I'm also not sure I am following the narrative on gender parity, which concludes that "the difference in gender parity is less than or equal to 10%. We see this as not a significant difference between the genders, nor is this a substantial deviation from the college averages." Once again, as far as I can see, the actual gap at the end of the five year period for the Chemistry Department has reached 17%, which is clearly not within the standard range as determined by the college, nor is it close to the college average itself. For these reasons, and only if what I've said here is accurate, I believe the narrative should explore some reasons for this significant reduction in gender parity, and also discuss any needed actions accordingly.	N/A	N/A
2. Does your program differ in enrollment distribution among ethnic groups, in this most recent year, compared to the College enrollment by ethnic group?				
(2018-19 College enrollment distribution by ethnicity: 5% African American, 30% Asian, 5% Filipinx, 26% Latinx, 0% Native American, 1% Pacific Islander, 29% White, 4% Decline to State)	The enrollment mirrors the college's ethnic distribution - Meets the Standard	The enrollment does not mirror the college's ethnic distribution - Needs Some Improvement to Meet the Standard	The enrollment mirrors the college's ethnic distribution - Meets the Standard	The enrollment mirrors the college's ethnic distribution - Meets the Standard
How many criteria are met in the data trend narrative explanation for enrollment by ethnicity?	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard

How many criteria are met in the proposed action narrative for enrollment by ethnicity?	The narrative is not included	The narrative is not included	The narrative includes all 5 of the criteria - Meets the Standard	The narrative is not included
Reader Feedback	N/A	The Chemistry Department's program review writer has, I believe, correctly checked "yes" in response to the question, "Does your program differ in enrollment distribution among ethnic groups, in this most recent year, compared to the College enrollment by ethnic group?" The main difference appears to be based on a higher percentage of Asian students and a lower percentage of white students who were enrolled in Chemistry during the last year as compared to the college's averages. It seems to this reader that Chemistry's program review might offer (or at least explore) through the narrative some reasons for this disparity (i.e., national, state-wide, local, at the campus level or otherwise). To round things out, adding a narrative on possible actions to address this disparity would also be warranted.	One thing to consider would be to work with Umoja and Puente to draw students from these learning communities into STEM.	While the data suggests Chemistry largely mirrors the college, the narrative doesn't address reasons for the ethnic composition of the program's students or address what may or may not be within its control regarding the students in the program.

F. Student Course Success

1. What does the data trend indicate about overall course success?	Course success has improved over the time span - Excellent	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard	Course success has improved over the time span - Excellent
How many criteria are met in the data trend narrative explanation for student course success?	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard
How many criteria are met in the proposed action narrative for student course success?	The narrative exceeds expectations - the narrative could be used as an exemplar - Excellent	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard

Reader Feedback	N/A	I would suggest adding something to the narrative in which you discuss what your department might have done to account for the increase in student success. Although your current success rates aren't as high as the college hopes for, at least your students are making progress on the whole, and that might be in part a result of some things you are doing well. At the same time, considering you have a gap still between your student success rates and the college's goals, it would appropriate to brainstorm and describe through the narrative some actions your department might be able to take to help boost continued growth in success rates.	Our recent data from IR is suggesting that the course success in 25 and 1A is not related to the Math background. Teaching pedagogy may play a role? Maybe examine assessment tools?	Since the proposed action is to " address this topic in our improvement plan after this review is complete," it's not possible for this reader to provide feedback on that action plan.
3. Is there a course success gap between African-American, Latinx, Filipinx student groups and Asian, Native American, Pacific Islander, White, Decline to State student groups?	The gap between the two groups has decreased over the time span - Meets the Standard	The gap between the two groups has decreased over the time span - Meets the Standard	The gap between the two groups has decreased over the time span - Meets the Standard	The gap between the two groups has decreased over the time span - Meets the Standard
How many criteria are met in the data trend narrative explanation for course success by student groups?	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes all 3 of the criteria - Meets the Standard		The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard
How many criteria are met in the proposed action narrative for course success by student groups?	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes all 5 of the criteria - Meets the Standard	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard
Reader Feedback	N/A	These narratives are clear and productive in terms of explaining the trends and exploring ways of continuing to build in this positive momentum in regards to success rates and closing the racial achievement gap. I would just recommend including some more specificity in places where actions are proposed. For example, what types of active learning strategies or instructional modalities might your department employ?	The general trend in the direction of the gap (narrowing) is encouraging.	It's encouraging that Chemistry is exploring workshops, new curriculum, online office hours, embedded tutors, learning communities, and peer tutoring as possible solutions. Without knowing why the achievement gap exists, though, which of the above changes may make the biggest difference for Chemistry students?

G. Student Course Success by Demographics

1. What does the data indicate about course success?

Female	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard	Course success has improved over the time span - Excellent
Male	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard	Course success has improved over the time span - Excellent
How many criteria are met in the data trend narrative explanation for course success by gender?	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard
How many criteria are met in the proposed action narrative for course success by gender?	The narrative is not included	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard
Reader Feedback	N/A	With success rates improving overall, you have something to celebrate. At the same time, with overall success rates below the college's goals, there is clearly room for growth. It is understandably challenging to find ways to continue to foster improved success, so I'd encourage members of the Chemistry Department to work together on brainstorming some strategies for this, and if needed, reach out to faculty from other schools (and other sources) to see what educators across the country are doing to address the reality that it's very difficult to attain high success rates in STEM courses at the college level.	I would urge looking into the first three items in the rubric: Culturally relevant pedagogy and/or curriculum Scheduling Instructional modality of the program course(s) delivery	No action plan is provided: "How to accomplish an increase has yet to be determined."
1. What does the data trend indicate about program student course success by ethnicity?				
African Americans	Course success has been flat or decreased over the time span by no more than 2 percentage point - Meets the Standard	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent
Asian	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent
Filipinx	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent
Latinx	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent

Native American	Course success has decreased over the time span by more than 4 percentage points - Needs Major Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard
Pacific Islander	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent
White student	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent	Course success has improved over the time span - Excellent
Decline to State	Course success has decreased over the time span by more than 4 percentage points - Needs Major Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard	Course success has decreased over the time span by no more than 4 percentage points - Needs Some Improvement to Meet the Standard
How many criteria are met in the data trend narrative explaining why the percentage decreased for the student ethnic group(s)?		The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard
How many criteria are met in the data trend narrative explaining reasons for the gap in course success?	The narrative includes fewer than 2 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes 2 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 3 of the criteria - Meets the Standard	The narrative is not included
How many criteria are met in the proposed action narrative for student course success by ethnicity?	The narrative includes fewer than 4 of the criteria - Needs Major Improvement to Meet the Standard	The narrative includes 4 of the criteria - Needs Some Improvement to Meet the Standard	The narrative includes all 5 of the criteria - Meets the Standar	The narrative is not included
Reader Feedback	Writes did not indicate that the decreases were significant; therefore no reasons were given for the decrease in course success in Native American and Declined to state populations. No actions were given.	Again, I'd encourage members of the Chemistry Department to work together on brainstorming some strategies for bringing the success levels overall up tp the college level, and if needed, reach out to faculty from other schools (and other sources) to see what educators across the country are doing to address the reality that it's very difficult to attain high success rates in STEM courses at the college level. Thanks for reading this feedback. I hope it will be helpful in some ways!	N/A	N/A