

De Anza College

Program Review – Annual Update Form – Fall 2025

1. Department/Area Name

Chemistry – PSME

2. Name of individual(s) completing the form:

David Gray

3. Briefly describe how your area has used the feedback from the Comprehensive Program Review and Annual Program Review Update provided by RAPP members over the past two years (if unsure, request the feedback form from your dean/manager).

Percentage of courses taught by part-time faculty – As noted below, the percentage of courses taught by part-time faculty in the Fall 2025 quarter has increased to 68.4% from 62.0% for the Winter 2025 quarter. This increase occurred despite the fact the department was able to hire a new full-time faculty. We appreciate the committee's acknowledgement that this is an issue that requires improvement.

Work towards departmental goals – Further work on goal A is not feasible until adequate OER texts are available for our general and organic chemistry courses. Although the department did hire a new full-time faculty, that faculty is still in Phase I of the tenure process and therefore not yet able to substantially contribute towards the department goals.

Passing score on SLO – The low passing score on the SLO identified in our previous update is for an outcome perennially difficult for both students and instructors to grapple with. Writing mechanisms is a detailed process that requires substantial practice, and even our instructors who have taught the course for twenty years are still working to find ways to address the historically low performance of students in this specific area.

Growth position request – In the feedback for our growth position request, a question was raised as to why the department refers to historical data (from 1999) in justifying our position request. It is because the department does not feel that incremental growth is a realistic indicator of the needs of the department. The department has been growing incrementally for over 25 years. During that time, the number of students served per year has increased over 50%, while the number of full-time instructors has remained constant, even with the hiring of a new full-time faculty in Spring 2025. The department simply cannot sustain incremental growth without additional full-time faculty, which is why we refer to historical data instead.

4. Describe any changes or updates that have occurred since you last submitted program review (program review [submissions](#)).

The department was fortunate enough to hire a new full-time faculty in Spring 2025. Despite this, the Fall 2025 quarter yet again represented the quarter with both the lowest percentage of load taught by full-time faculty and the highest percentage taught by part-time faculty within a quarter in the department's history. During the Fall 2025 quarter, 27.1% of load was taught by full-time faculty, 4.5% of load as overload, and 68.4% of load by part-time faculty. More than ever, the department is challenged to staff its full schedule and equally challenged to pursue its department goals.

5. Provide a summary of the progress you have made on the goals (i.e., OKRs for Student Services) identified in your last program review (as included in the comprehensive program review or annual program review update).

A) Title – Student support and course costs

Goal – Increase student support and reduce costs in introductory courses

Parties – Department

Student support:

No progress has been made on this goal due to the lack of available faculty.

Textbooks:

The OER textbooks for general chemistry (Chem 1A, 1B, 1C) and organic chemistry (Chem 12A, 12B, 12C) have not changed since the previous program review update. The department has therefore still been unable to make progress in this aspect of the goal, since, as stated in our previous program review update, the department does not have the faculty available to assist part-time faculty with developing the resources necessary to augment the OER texts to enable their use in the aforementioned classes, and the department does not consider it reasonable to expect new part-time faculty to enter into the program with such materials already developed.

B) Implementation of AS degrees in chemistry and biochemistry

The unit restrictions for creating an ADT in chemistry have not changed, so the department is still unable to offer such a degree, although we hope this may change in the near future. Unfortunately, no progress has been made on an AS degree.

C) Develop and maintain a modern laboratory program

The department has begun a comprehensive review of the general chemistry (Chem 1A, 1B, 1C) lab program. A discussion of all of the labs in the program will occur during 2025-6 academic year, with the goal of implementing any changes incrementally throughout the 2026-7 academic year.

6. If your goals (i.e., OKRs for Student Services) are changing or you are adding a new goal(s), please include them below. If new goals require resources, please list requested resources that were not included in your last program review.

Our program goals have not changed.

7. Describe the impact to date of previously requested resources (personnel and instructional equipment, facilities/upgrades) including both requests that were approved and were not approved. For example, what impact have these resources had on your program/department/office and measures of student success or client satisfaction and what have you been able to and unable to accomplish due to resource requests that were approved or not approved?

To repeat from our previous program review update, in terms of personnel, the department is yet again at its lowest staffing level of full-time faculty versus number of students served in its history. The replacement of a full-time faculty in the Spring 2025 quarter only returned the department to the same level as when the current coordinator was hired in 1999, while since that time there has been a roughly 50% increase in number of students served per quarter. With faculty on release or on PDL, only 27.1% of schedule load was taught by full-time faculty in the Fall 2025 quarter. This has severely impacted our ability as a department to make progress on our program goals.

In terms of equipment requests, the requests that were not funded were for equipment that is currently still in use but aging. Therefore, there has not been an immediate impact by the request not being fulfilled, however it is expected that over time the equipment will fail and its replacement will become urgent.

8. How have these resources (or lack of resources) specifically affected disproportionately impacted students/clients? If you have not requested or received resources, still describe how your area has been able to serve disproportionately impacted students/clients.

The department identified in our previous two program reviews that disproportionately impacted students are concentrated in lower courses – Chem 25, Chem 30, and Chem 1A – which are courses that are disproportionately taught by part-time faculty – in particular, by part-time faculty that are new hires. Securing a growth position would help significantly towards increasing the amount of load taught by full-time instructors in general and in the Chem 25, 30, and 1A courses specifically.

9. Refer back to your Comprehensive Program Review and Annual Program Review Update from the past two years under the section titled Assessment Cycle or the SLO website (<https://www.deanza.edu/slo/>). In the table below, provide a brief summary of one learning outcome, the method of assessment used to assess the outcome, a summary of the assessment results, a reflection on the assessment results, and strategies your area has or plans to implement to improve student success and equity. If your area has not undergone an assessment cycle, please do so before completing the table below.

Table 1. Reflection on Learning Outcomes (SLO, AUO, SSLO)

Learning Outcome (SLO, AUO, SSLO)	Chem 1A – #2: Construct balanced reaction equations and illustrate principles of stoichiometry.
Method of Assessment of Learning Outcome (please elaborate)	Two questions on the final exam. The first, worth 18 points, was a classic limiting reagent problem, directly connected to stoichiometry; the second, with 16 points, involved writing balanced molecular, ionic, and net-ionic equations for a precipitation reaction. A passing score (70%) was 13 points on the first question and 11 points on the second. The final exam itself was worth 200 points, and the course point total was 1000 points.
Summary of Assessment Results	The results represent two sections of Chem 1A from the Fall 2025 quarter (01 and 02), totaling 54 students. On question one, 39 (72%) of students received a passing score (13/18 or greater), with a class average of 14/18 (rounded), or 78%. On question two, 33 (61%) of students received a passing score (11/16 or greater), with a class average of 12/16 (rounded), or 75%.
Reflection on Results	The results are, unfortunately, unsurprising, since these two particular problems are always challenging to students, particularly the question on balancing reactions. The first problem is mathematical, while the second problem is conceptual and procedural – in both cases, the student should be able to master the outcome with sufficient practice, wherein lies the root of the problem.

<p>Strategies Implemented or Plan to be Implemented (aka: enhancements)</p>	<p>To be frank, after 26 years of teaching these problems, I am at somewhat of a loss to suggest novel strategies for improving the performance of my students, since I truly believe that with enough practice a prepared student should be able to master both problems. These two specific problems are ones that I thoroughly review each quarter in lecture, including having the students work on examples during class and recommending related homework questions from the text. Both problems appear on assessments that occurred prior to the final exam, I review the answers to the problems in class, and the questions on the final exam are identical to the questions on those previous assessments (with only changes in the quantities or identities of the substances involved). I even make a distinct point in lecture of identifying these two problems as historically challenging to students and explaining in details mistakes commonly made on the problems and how to avoid them. For the stoichiometry problem, I introduce the topic by using an example of making grilled cheese sandwiches to connect the concepts of stoichiometry to everyday experience. Audio recordings of all of my lectures are available on my Canvas site for review, as well as PDF documents of all written notes I generate during class. To me, it therefore boils down to something simple: that I am somehow not inspiring/cajoling/scaring my students enough into practicing sufficiently, without imposing a burdensome homework regime that I do not feel is appropriate for this class. My strategy will therefore be to keep doing what I do each quarter – to try my best to engage with my students and provide them with the tools they need to succeed.</p>
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Please email this form to your dean/manager.

10. Dean Manager Comments: Well detailed report. David put question number 6 outside of the table. The content is still there but just did it in a different layout.

11. Vice President/Associate Vice President Comments:

The Chemistry Department remains a cornerstone of STEM instruction at De Anza College, serving a growing number of students pursuing transfer and health-related pathways. Despite the recent hire of a full-time faculty member, the department continues to operate with historically low levels of full-time staffing relative to student demand, with more than two-thirds of course load taught by part-time faculty. This staffing imbalance limits the department's capacity to advance OER adoption, student support initiatives, and long-term program development. Stabilizing full-time faculty capacity through a growth position is essential to sustaining instructional quality, supporting disproportionately impacted students in gateway chemistry courses, and meeting the needs of a steadily expanding student population.