Instructions: The first column below matches key words in TracDat where you will enter the requested information. The second column fully describes the information that the IPBT is requesting. It also represents the information you would see if you pressed the help button (a question mark) by each box in TracDat. The third column is where you can input your data/responses at this time. You will be able to copy and paste or type in your information from the third column directly into the TracDat boxes. Save this Word doc in the following format: sp20cpr_deptname. Last steps: ALWAYS keep a soft copy of your work in your files to ensure that your work is not lost. Upload a copy of this document into the Trac Dat, "Documents file". Also upload the Program Review Data sheet(s). If you have questions, please refer to your workshop handout (http://www.deanza.edu/slo/tracdat.html) or contact: papemary@fhda.edu.

Section I: Overall program description (including CTE)
Section II: Overall student enrollment and success
Section III: Equity
Section IV: Assessment Cycle
Section V: Resource requests

In TracDat. Limit narrative to 100 words; bullet points encouraged

	Information Requested	Explanation of Information Requested. ? TracDat Help button will reveal the same cues (sorry no hyperlinks)	Input your answers in columns provided. Note: reference documents can also be attached. Make sure to note the name of any reference documents in your explanations.
	Program Description		
I.A.1	Department Name:		Chemistry Department
I.A.2	Program Mission Statement:	"What are your Program Learning Outcomes? How do your Program Learning Outcomes relate to the mission of De Anza College and our Institutional Core Competencies"? (http://www.deanza.edu/about/missionandvalues.html)	The Program Learning Outcomes (PLOs) for the Chemistry Department, as existed at the start of the current Program Review cycle, were:

1) Demonstrate an understanding of the scientific method and utilize the method in a laboratory situation;
2) Demonstrate knowledge of basic chemical concepts as well as mathematical skills as they relate to the study of chemistry;
3) Demonstrate the ability to effectively express scientific ideas orally and in writing; and,
4) Gather and analyze information from primary and secondary sources.

In reflecting on our PLOs, the department determined that three of the PLOs – numbers 1, 2, and 4 – are commensurate with three of the Institutional Core Competencies (ICCs): Communication and Expression, Information Literacy, and Critical Thinking. The ability to conduct experiments in the laboratory, to gather and critically analyze data from a variety of sources, and to lucidly communicate both the results of the experiments and the implications of those results require that students be able to communicate and express ideas, to use and evaluate chemical literature and manipulate concepts, and to apply critical thinking to the methods used and to the interpretation of the results.

In striving to assess our PLOs, the department felt that the method chosen assessing PLO |

			#4 – analysis of laboratory reports from Chem 12C (third-quarter organic chemistry) – did not properly address the objective, as although Chem 12C is the highest-level course the department offers, the reports generated in the class are, arguably, substantially less complicated than the reports generated in a class such as Chem 1B (second-quarter general chemistry). Additionally, the department felt that the outcome should be more focused on a key goal of the laboratory program: that students can successfully and correctly collect and interpret data, especially data obtained through the use of analytic instrumentation. Thus, the department has decided to update PLO #4 as follows: *Demonstrate the ability to acquire and analyze data through empirical observation and the use of appropriate instrumentation.* Additionally, in further discussion, the department determined the original intent of PLO #3 was already captured largely in the other objectives. Moreover, the department realized an important aspect of the program not captured in any of the PLOs that falls under the ICC areas of both Physical/Mental Wellness and Personal Responsibility and Civic Capacity for Global, Cultural, Social, and Environmental Justice. A crucial component of conducting chemical experiments is the ability to do so safely, following all applicable protocols for the storage, handling, and disposal of hazardous waste. Beyond the laboratory setting, it is also crucial for our students to understand the role of chemistry in everyday life, both in the way that it positively affects society through the discoveries that chemists have made but also in the way that it has harmed society through the misuse and mishandling of chemicals. Thus, the department has decided to replace PLO #3 with the following: *Demonstrate basic chemical hygiene and safety in a laboratory environment.*
I.A.3	What is the Primary Focus of Your Program?	Select Basic Skills, Transfer. Career/Technical, Learning Resources/Academic Services, personal enrichment or N/A	Transfer
I.A.4	Choose a Secondary Focus of Your Program.	Basic Skills, Transfer. Career/Technical, Learning Resources/Academic Services, personal enrichment or N/A	Career/Technical
I.B.1	# Certificates of Achievement Awarded	If applicable, enter the number of Certificates of Achievement awarded during the current academic year. Please refer to: http://deanza.fhda.edu/ir/AwardsbyDivision.html Leave blank if not applicable to your program.	NA

I.B.2	# Certificates of Achievement-Advanced Awarded:	If applicable, enter the number of Certificates of Achievement - Advanced awarded during the current academic year. Please refer to http://deanza.fhda.edu/ir/AwardsbyDivision.html . Leave blank if not applicable to your program.	NA
I.B.3	# ADTs (Associates Degrees for Transfer) Awarded	List Associate Degree Transfer awarded by you department during the current academic year. Please refer to http://deanza.fhda.edu/ir/AwardsbyDivision.html Leave blank if not applicable to your program.	NA
I.B.4	# AA and/or AS Degrees Awarded:	If applicable, enter the number of Associate of Arts or Associate of Science degrees awarded during the current academic year. Please refer to http://deanza.fhda.edu/ir/AwardsbyDivision.html Leave blank if not applicable to your program	NA
I.C.1	CTE Programs: Impact of External Trends	Career Technical Education (CTE) programs: provide regional, state, and labor market data, employment statistics. Refer to "CTE Program Review Addenda" at: https://www.deanza.edu/workforceed/ged/ Identify any significant trends that may affect your program relative to: 1) Curriculum Content; 2) Future plans for your program e.g. enrollment management plans.	NA
I.C.2	CTE Programs: Advisory Board Input:	Career Technical Education (CTE) programs: provide recommendations from this year's Advisory Board (or other groups outside of your program, etc.). Briefly, address any significant recommendations from the group. Describe your program's progress in moving towards assessment or planning or current implementation of effective solutions.	NA
I.D.1	Academic Services and Learning Resources: #	Only for programs that serve staff or students in a capacity other than traditional instruction,	NA

	Faculty Served	e.g. tutorial support, service learning, etc. State number of faculty served: 0 = no change; (- #) decreased; # increased; leave blank if not applicable to your program	
I.D.2	Academic Services and Learning Resources: # Students Served	Only for programs that serve staff or students in a capacity other than traditional instruction, e.g. tutorial support, service learning, etc. State number of students served: 0 = no change; (- #) decreased; # increased; leave blank if not applicable to your program	NA
I.D.3	Academic Services and Learning Resources: # Staff Served	Only for programs that serve staff or students in a capacity other than traditional instruction, e.g. tutorial support, service learning, etc. State number of staff served: 0 = no change; (- #) decreased; # increased; leave blank if not applicable to your program	NA
I.E.1	Full Time Faculty (FTEF)	For ALL programs: Refer to your program review data sheet. http://deanza.fhda.edu/ir/program-review.14-15.html .	The full time faculty FTEF for 2012/13, 2013/14, and 20114/15 is 13.4, 15.5 and 15.4 respectively.
I.E.2	# Student Employees	State number of student employees and if there were any changes: 0 = no change; (- #) = decreased; # = increased; blank if not applicable to your program	10-15 student employees per year that cover 40 hours of work per week. No changes compared to previous years.
I.E.3	Full-time to Part-time ratio % of Full -time Faculty Compared to % Part-time Faculty Teaching	Compare the changes in % of FT and PT faculty teaching in your department? 0 = no change; (- %) = decreased; % = increased; blank= not applicable to your program. Refer to your program review data sheet. http://deanza.fhda.edu/ir/program-review.14-15.html.	The percent FT faculty for 2012/13, 2013/14, and 20114/15 is 30%, 32%, and 28% respectively. The data for % FT appears to show a decrease over the three-year period. There are several reasons for this. The first reason is that Dr. Paul Calgher retired in spring 2013 and was on Article 19 during 2014/2015. (We did receive a replacement for Dr. Calgher and were able to hire Dr. Kanny Wan, but not until Fall 2015.) Dr. Ram Subramaniam was also on sabbatical in 2014/15. And, lastly, the data includes both paid and nonpaid load. The number of nonpaid courses (Chem Honors and Special Projects, Chem 77, 77X, 77Y) varies from quarter to quarter. With the exception of Paul Calgher's retirement and Dr. Subramaniam's sabbatical, there have been no other changes in FT teaching. Before Dr. Calgher's retirement we had 6 fulltime faulty with a %FT of about 30% (2012/2013). With his replacement we are back to having 6 fulltime faculty and are likely hovering around a %FT of 30% once again. Regardless of how the numbers are viewed it is clear that the %FT is **exceeding low** and if any faculty have an emergency, are on sabbatical, or have release time, it has a direct adverse effect on the department's %FT.

The percent PT faculty for 2012/13, 2013/14, and 20114/15 is 51%, 46%, and 57% |

			respectively. The data for % PT also appears to show an increase in the 3 year period. This fluctuation is again due to the reasons as stated above. One faculty person retired, one faculty person was on sabbatical and the number of honors and chem 77 courses change from quarter to quarter. It should be noted that the chemistry department is very much below the recommended percentage of courses taught by FT faculty according to the guidelines outlined by the American Chemical Society's Guidelines for Chemistry in Two-Year College Programs, Fall 2015. "Full time permanent faculty should be sufficient in number to teach the full range of courses on a regular basis, with the number of credit hours taught by permanent faculty exceeding 75% of the total chemistry offerings." The De Anza chemistry department has averaged a FT % of 30% over the last three years. Even including the fact that FT faculty also teach over load the FT % is still well below the recommended guideline of 75%. Including over load the average FT % is only 49% over the last three years.
I.E.4	# Staff Employees	State number of staff employees and if there were any changes: 0 = no change; (- #) = decreased; # = increased; blank if not applicable to your program ONLY report the number of staff that directly serve your program. Deans will make a report regarding staff serving multiple programs.	The program review data do not include information regarding the number of Staff Employees. The chemistry department has one full-time lab technician and one half time lab technician. This has not changed in the last three years.
I.E.5	Changes in Employees/Resources	Briefly describe how any increase or decrease of employees/resources has impacted your program. Leave blank if not applicable to your program.	There have been no increases or decreases in our program in the last three years; however, it should be noted that again we are well below the recommended number of staff members as suggested by the American Chemical Society's Guidelines for Chemistry in Two-Year College Programs, Fall 2015. "One full-time laboratory technician for every four full-time or full time equivalent chemistry faculty members is recommended." We currently operate at an average FTEF of 14.8. Based on the American Chemical Society's recommendation we should have 3.7 full-time staff employees for support. The lack of support has a direct effect on the department. We have a difficult time maintaining our sophisticated laboratory equipment, maintaining clean labs, tracking waste management and disposal, and being able to update and expand our course curriculum because faculty have been required to assist with some of these duties in order to keep the program running.
	Enrollment		
II.A.1	Enrollment Trends	What significant changes in enrollment have you seen in the last three years? Refer to http://deanza.fhda.edu/ir/program-review.14-15.html	Within the last three years, our overall enrollment has increased 4.9% - from having 1795 students in the regular 2012-13 academic year to having 1874 students in the regular 2014-15 academic year. And compared to the last review cycle, we've taught 4% more students in this past 3-year cycle (2012-15, 8301 students) than the previous cycle (2010-13, 7992 students).

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II.B.2	Overall Success Rate	What significant changes in student success rates have you seen in the last three years?	Our overall student success rate had steadily increased 3-4% annually in the past 3 years. Starting at 73% in 2012-13, the rate increased to 76% in 2013-14 and further increased to 80% in 2014-15. At the same time, the rate of withdrawal has decreased from 15% in 2012-13 to 11% from 2013-14 to 9% in 2014-15. Meanwhile, the rate of non-success has remained largely unchanged – it did not change in 2012-13 to 2013-14 and dropped by 1% in 2014-15.
II.B.3	Plan if Success Rate of Program is Below 60%	In accordance with ACCJC requirements, the college has adopted an institutional standard for successful course completion at or above 60% http://www.deanza.edu/ir/deanza-research-projects/2012_13/ACCJC_IS.pdf If course success rates in your program fall below 60%, what are the department's plans to bring course success rates up to this level? Leave blank if N/A.	N/A. The program's overall success rate has remained well over 60% in the past 3 years.
II.C.4	Changes Imposed by Internal/External Regulations	Address program changes implemented as a response to changes in College/District policy, state laws, division/department/program level requirements or external agencies regulations? How did the change(s) affect your program? (e.g. any curriculum, program reorganization, staffing etc.)	Rules and regulations regarding chemical safety and chemical hazardous management from various agencies are constantly evolving, and it is crucial for our chemistry lab program to keep updating our lab and safety protocols to comply with these new requirements. This, unfortunately, had been a difficult task since we lack the structural, financial, or staff support to keep up with these policy changes. While we have been able to accommodate some minor changes, like complying with new fire extinguisher inspection regulations, we do not have the staff support to handle any major policy changes. Our department had been working with Karen Lauricella, the Director of EH&S at FHDA, to establish a new Chemical Safety Hygiene Plan that OSHA require chemistry lab programs to follow. The implementation of this plan will require a chemical safety hygiene officer to oversee the newly outlined regulations, and we will require additional staff to support such responsibilities.

Providing safety training to faculty is also an important part in maintaining the safety of our lab program. We are happy to report that, for the first time in years, the full-time and part-time faculty had received safety training in 2015-2016 from the district. We strongly believe that annual safety training for our entire faculty should be a standard part of our program, and thus we request an annual budget allocation of $6000 – 10,000 to be used towards safety training. |
| | **Equity** | | |
| III.A | Growth and Decline of Targeted Student Populations | Briefly, address student enrollment data relative to your program's growth or decline in targeted populations: African Americans, Latinos, Filipinos. (Refer to http://deanza.fhda.edu/ir/program-review.14-15.html) | In comparison to the 13/14 school year, the chemistry department saw modest changes in student enrollment in the identified groups. Enrollment among African American students decreased by 32% to 63 students while enrollment among Filipino and Latino/a populations both showed modest gains. The Filipino population grew by 12 % to 239 while the Latino/a population grew by 14% to 375. |

| III.B | Closing the Student Equity Gap: | What progress or achievement has the program made relative to the plans stated in your program's 2013 -14 Comprehensive Program Review, Section II.A.3, towards decreasing the student equity gap? See IPBT website for past program review documentation: http://deanza.edu/gov/IPBT/program_review_files.html | The Chemistry department has improved its success rate among nearly every ethnic group for which we track data. Since the 2012-13 school year the success rate among Filipino students has increased from 68% to 77%, while Latino/as have shown an increase from 57 to 63%. Other groups have shown similar or more modest increases. The one exception seems to be the African Americans student population, which saw a decrease from 71% to 62%. While still above the goal set by the college, such a decline is cause for concern and bears watching. Notably, withdrawals are slightly up for African Americans, lending support to observations in the last CPR that these are significant contributors to the deficit in student success for this group. Conversely, a decrease in withdrawals among Filipino and Latino students may be due in part to some success in increasing representation of these ethnic groups at the Student Success Center.

Some improvement may be related to an increase in department involvement in pedagogical research and support aimed particularly at underserved target populations, particularly with respect to the IMPACT AAPI grant. This grant has helped to foster a culture of inclusion, building a community that more students feel supported in. In this vein, Ram Subramaniam taught a class in coordination with IMPACT AAPI specifically designed with the targeted groups in mind, with these groups specifically recruited into a cohort for one particular section. While the class met with some success, a lack of laboratory support made further implementation of this program unfeasible and it was shelved after the initial pilot class.

Unfortunately, other plans suggested in the last CPR have not been fully explored due to lack of instructor resources. No data has been made available to the department regarding the reasons that students withdraw from the class, leaving the department to attempt to manage the situation from an incomplete data set. As such, no "early retention plan" has been implemented to target at-risk students early in the quarter, nor have the reasons behind the observed trends been fully understood. This lack of data is something we must remedy in order to move forward with further departmental planning. |
| III.C | Plan if Success Rate of Targeted Group(s) is Below 60% | In accordance with ACCJC requirements, the college has adopted an institutional standard for successful course completion at or above 60% http://www.deanza.edu/ir/deanza-research-projects/2012_13/ACCJC_IS.pdf Are success rates of targeted groups at or above 60%? If not, what are the department's plans to bring the success rates of the group(s) up to this level? This applies to African American, Latino/a and Filipino students. | The current success rate of all target populations is above 60%. Both Filipino and Latino groups saw increases over the values reported in the previous CPR, while African Americans saw a slight decrease. |
| III.D | Departmental Equity | What progress or achievement has the | While student success among several target populations has increased, so has that among |

	Planning and Progress	program made relative to the plans stated in your departmental 2014-15 Equity Plan?	the non-target populations. Between 2012/13 and the present the target group has seen an increase of 6 percentage points to 68% overall, while non-target groups have increased to 83%, resulting in a slightly wider achievement gap than previously existed. The primary challenge preventing the department from more actively addressing the equity gap remains unchanged from our previous CPR: only 28% of our yearly load is taught by full-time faculty as part of regular load (please see our Faculty Request), which represents a decrease from when our previous CPR was submitted. Additionally, a significant portion of the department's time is devoted to issues related to the functioning of the laboratory program – including hazardous materials use, storage, and disposal – which represents an additional strain on faculty resources not experienced in lecture-only classes. The department simply does not have enough full-time faculty to adequately address the growth and maintenance of our program while fulfilling an expanding number of commitments at the institutional level, such as the SLOAC/PLOAC reporting process. Without the requested growth position, the department fears it will not make any further substantial gains towards narrowing the equity gap or increasing student enrollment and success overall.

	Assessment Cycle		
IV.A	PLOAC Summary	Give the percentage of Program Level Outcome statements assessed to date. Run Ad Hoc report entitled "XXX PLOAC Work" and scroll to the bottom of the report for counts. Then calculate #Reflections & Analysis/#PLO statement times 100. This percentage may be over 100% or 0%. All program level outcomes are to be assessed for a minimum of a second time before the Comprehensive Program Review in Spring 2019.	100%
IV.B	SLOAC Summary	Give the percentage of Student Level Outcome statements assessed to date. Run Ad Hoc report titled "XXX SLOAC work- Active Only" and scroll to the bottom of the report for counts. Then calculate #(Reflections & Analysis + #Archived from ECMS) /#SLO statement times 100. (N.B. Number of SLOs assessed and archived from ECMS is the last item in Department -> General Information page.) This percentage may be over 100% or 0%. All course level outcomes are to be assessed for a minimum of a second time before the Comprehensive Program Review in Spring 2019.	103%

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	Resource Requests		
V.A	Budget Trends	Describe impact, if any, of external or internal funding trends upon the program and/or its ability to serve its students. If you don't work with budget, please ask your Division Dean to give you the information.	Please see section V
V.B	Funding Impact on Enrollment Trends	Describe the impact, if any, of external or internal funding changes upon the program's enrollment and/or its ability to serve its students. Refer to Program Review data sheets for enrollment information: http://deanza.edu/ir/program-review.14-15.html	Please see section V
V.C1	Faculty Position(s) Needed	A drop down menu will allow you to choose: Replace due to Vacancy, Growth, None Needed Unless Vacancy	Growth
V.C.2	Justification for Faculty Position(s):	Do you have assessment data available to justify this request for a faculty position? If so provide the SLO/PLO assessment data, reflection, and enhancement that support this need. If not, provide other data to support this need.	All the courses offered by our department are generally full and they also have a full waiting list. Students have demonstrated a desire for chemistry classes. Most students need these classes as part of heir UC/CSU transfer agreements. Our inability to offer more sections of our classes is a result of challenges in our personnel situation- both staff and faculty.

In discussions with Christina Espinosa-Pieb, the vice president of instruction at De Anza College, our department has come up with a three-phase plan to expand our course offerings. The summary of the plan is as follows:
Phase 1: 2016-17 add 3 sections, one in each quarter, 2017-18 add 3 sections, one in each quarter, 2018-19 add 3 sections one in each quarter.
Phase 2: Repeat above (2020-23)
Phase 3: Repeat above (2024-27)

Currently (2015-16) our department has SIX full time faculty members and ONE staff person. However, one of the six full time faculty member, Dr. Kanny Wan, has indicated that she will be resigning her position at the end of this academic year due to her family relocating to the east coast. And one other full time faculty member, Dr. Homer Tong, has declared his intentions to retire at the end of the next academic year (2016-17). As a result we are going to be down to FOUR full time faculty members and ONE staff person. While the ratio of full time faculty to students is already way below the American Chemical Society's and State of California's and several of our peer institution's (including Foothill College) prescribed levels, it is going to become worse with the loss of two full time faculty members.

At present we offer approximately 100 sections each year (including the summer quarter). As per our expansion plan listed above, this number will increase by 10% in three years |

and an additional 20% in the next six years. It will be impossible for us to operate successfully with the present number of full time faculty members. Full time faculty members are essential for 1) curriculum development 2) mentoring part time faculty and 3) representing the department in college level committees and 4) engaging in district level activities. We will desperately need all faculty replaced (back to a total of six) for the afore mentioned reasons, and most importantly, we will need a growth position in order to mitigate our low %FT ratio and to accommodate our high student waiting lists.

As a result we are requesting the following positions in order to maintain academic excellence and to expand out program:

2016-17: Authorization for TWO full-time faculty positions- 1) a replacement for the faculty member who is resigning and 2) a growth position.
2017-18: Authorization for ONE full-time faculty position- 1) a replacement for the retiring faculty member.

V.D.1	Staff Position(s) Needed	A drop down menu will allow you to choose: Replace due to Vacancy, Growth, None Needed Unless Vacancy Only make request for staff if relevant to your department only. Division staff requests should be in the Dean's summary.	Growth
V.D.2	Justification for Staff Position(s):	Do you have assessment data available to justify this request for a staff position? If so, provide the SLO/PLO assessment data, reflection, and enhancement and/or CTE Advisory Board input to support this need. If not, provide other data to support this need.	All the chemistry classes have a lab associated with them. Most classes meet for a lab SIX hours per week, while others meet for a lab THREE hours per week. The laboratory curriculum is an essential and intricate part of the chemistry curriculum. While faculty are responsible for the laboratory curriculum, it is the laboratory staff person who is responsible for the operation of the labs. There are three distinct functions of the laboratory staff person: 1) management of the stockroom and day to day operations of all the laboratories- chemicals, supplies, instrumentations 2) Hazardous waste management and 3) Chemical safety and lab management. In most academic institutions (we have conducted a best-practices study and gathered this information and it is available for your analysis on request) these functions indicated above are distributed among TWO to THREE different individuals. In fact this is the situation even within our own district, at the Foothill College chemistry department. However, the situation at De Anza College is rather bleak. We have ONE full-time staff person managing the operations of the entire chemistry department and a half-time person who has minimal duties. To the credit of the full-time individual, we have been managing, but this has placed enormous constraints on our program. First off all, the American Chemical Society guidelines indicate that due to this low

			number of staff personnel, we are facing a major safety hazard not only for the faculty working conditions, but for our students. Additionally, any sort of changes to our laboratory curriculum has been greatly limited due to the fact that the person managing the laboratories has been stretched to her limits in terms of her workloads. As a result, while other academic institutions have made great strides in incorporating state of the art chemistry curriculum- such as use of modern instrumentation or project-based laboratory exercises or Process Oriented Guided Inquiry Learning (POGIL which is highly recommended by both NSF and ACS)- we at De Anza College are woefully behind. In order for us to make any advances towards offering more challenging and inspiring laboratory curriculum to our students we need one additional full time staff person immediately to provide us with a total of 2.5 staff positions. If this is not possible, then at the bare minimum we would at least need to expand our half-time position to a full-time position giving us a total of 2 full-time posts. On top of curricular innovations, the additional staff person is also essential to the expansion process detailed in the previous section. In fact it must be emphasized that the expansion steps described above are contingent upon the department's ability to work with a second full time staff personnel.
V.E.1	Equipment Requests	A drop down menu will allow you to choose: Under $1,000 or Over $1,000 or no equipment requested	See below
V.E.2	Equipment Title, Description, and Quantity	• Description should identify if the item(s) are new or replacement(s), furniture/fixtures, instructional equipment, technology related, expected life of item, recommended warrantees etc. • Did this request emanate from a SLOAC or PLOAC process? • Does this item require new or renovated infrastructure (e.g. wireless access, hardwire access, electric, water or heat sources . . .)	The following items were requested in the previous program review. It should be noted that we did not receive funding for these items and many of these items are wearing out. Additionally, if we follow our aggressive expansion protocol we need replacement of many of these items every three years. Electronic analytical balances: 40 Hotplates: 120 Centrifuges: 30 Vernier probe kits: 40 pH electrodes: 20 (central to the Chem 1 program, 2-year lifespan) Annual preventive maintenance for infrared (IR) spectrometers: 4 (prevents high future repair costs) Laser field fit kit for IR spectrometers: 4 (critical replacement part for IR spectrometers, 4-year lifespan) Potassium bromide windows for IR spectrometers: 4 (critical part for IR spectrometers, 4-year lifespan) Replacement combination padlocks for lab lockers: 1,100 units (locks in current set are failing)

			Chemical inventory software New items requested: Dry ice maker: 1 GC Mass spectrometer: 2 New NMR software license: 2 Chem Draw software licenser: 100 Microplate reader: 3 Refrigerated Microcentrifuge: 2 Permanent Equipment maintenance funds Permanent Deionized Water maintenance funds
V.E.3	Equipment Justification	• Do you have assessment data available to justify this request for equipment? If so, provide the SLO/PLO assessment data, reflection, and enhancement and/or Advisory Board input to support this need. If not, provide other data to support this need. • Who will use this equipment? • What would the impact be on the program with or without the equipment? • What is the life expectancy of the current equipment? • How does the request promote the college mission or strategic goals? Refer to mission: http://deanza.edu/about/missionandvalues.html and strategic goals (page 15 http://www.deanza.edu/emp/pdf/EMP2015-2020_11-18-15.pdf	The equipment is necessary for three purposes: 1. To replace broken, worn, and dysfunctional equipment. 2. To accommodate the planned expansion of the department offerings. For instance, we currently offer approximately seven to eight sections of CHEM 1A during each quarter. In each of those sections, the 30 students work with a certain number of equipment for each of their experiments. When we expand our program, we will perhaps begin to offer eight sections of CHEM 1A, this means, TWO additional set of equipment for each of those 30 students. Likewise this will translate to other classes that we will offer more sections of. 3. When we update our laboratory curriculum to offer more modern experiments, we will still need more modern instruments to perform the data collection and analysis. Both the program expansion as well as curriculum revision requires the purchase of additional equipment. These are not supported by SLO/PLO information, but the expansion is based on, as described above, the extremely high demand for ALL the chemistry classes (see waiting list data from the last 15 years).
V.F.1	Facility Request	Name type of facility or infrastructure items needed. Renovation vs new. Identify associated structures needed to support the facility e.g. furniture, heat lamps, lighting, unique items above and beyond what is normally included in a similar facility.	Quarterly scheduled maintenance of the HVAC and chiller system of our laboratory building. Instillation of shower curtains in all laboratory rooms. Flammable/Corrosive storage cabinets are URGENTLY needed. Replacement of the locking mechanisms of the all the student lockers.
V.F.2	Facility Justification	• Do you have assessment data available to justify this request? If so, provide the SLO/PLO assessment data, reflection, and enhancement and/or CTE Advisory Board input to support this need. If not, provide	Currently nothing is maintained on a regular basis. Consequently, we spend more money on repairs and this could be prevented by regular maintenance. We also have requested a number of items such as shower curtains, flammable cabinets, locking mechanisms that must provided by facilities since they cannot be purchased by lottery money and must be installed by facilities.

		other data to support this need. • Who will use this facility? • What would the impact be on the program with or without the facility? • What is the life expectancy of the current facility? • How does the request promote the college mission or strategic goals?	
V.G.	Equity Planning and Support	Has this work generated any need for resources? If, so what is your request?	We have taken some steps to address the differences in our student populations. Currently, Dr. Subramaniam and Dr. Woodbury are involved with a multidisciplinary collaboration through the IMPACT-AAPI grant with Jeff Schinske (Biology) to improve the success rate among Asian American and Pacific Islander students. Dr. Cinzia Muzzi also participates in science out reach and bilingual literacy through volunteer work at San Mateo county elementary school. Finally, in order to enable access to essential resources our department has already made available to students a free lab manual, thereby saving students an average of $100/yr. In addition, we are currently exploring the possibility of providing students free access to a textbook provided by OpenStax. This will save each student an additional $200/year. The department would certainly like to do more in terms of equity planning and outreach, but given that our current faculty are stretched very thin with teaching and department responsibilities we have difficulty in accomplishing additional equity planning and outreach.
V.H.1	Other Needed Resources	List resource needs other than faculty, staff, facility, and equipment needs. For instance, assistance in working with counselors, finding tutors to work with students, support for assessment projects.	NA
V.H.2	Other Needed Resources Justification	Do you have assessment data available to justify this request? If so, provide the SLO/PLO assessment data, reflection, and enhancement that support this need. If not, provide other data to support this need.	NA
V.J.	"B" Budget Augmentation	How much? Who/what could be supported if this additional funding was awarded? What would the impact be on the program with or without the funds? How does the request promote the college mission or strategic goals? Refer to mission: http://deanza.edu/about/missionandvalues.html and strategic goals (page 15 http://www.deanza.edu/emp/pdf/EMP2015-2020_11-18-15.pdf	Our B-budget has remained fairly steady for the last several years. As a result of our expansions (even if modest), we have had greatly increased budgetary needs in this area. In order to provide that money, we have been given increased access to the lottery funds. However, this is not always ideal. Due to the restrictions in what the lottery funds can be used for, we are limited in how these funds are utilized and at times this has not been to the benefit of the department. So, we are requesting that the B-budget funds be appropriately augmented so that we do not need to tap into funds from the lottery account. Also- with the expansion proposal, there will need to be a commitment to steadily augment the B-budget periodically as the program continues to expand. The current B-budget is insufficient and does not regularly cover the cost of the following:

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		State the SLO/PLO assessment data, reflection, and enhancement and/or CTE Advisory Board input to support this need. If you do not deal with the B budget directly, you can use the comment: "please refer to the Dean's summary".	-Student worker salaries -Operating expenses such as equipment maintenance, deionized water service, repair and replacement of equipment. -Staff safety training These items are also often not covered by Lottery or equipment funds. We estimate that to actually run efficiently and effectively we need an augmentation of at least $50,000 just to meet the current needs of the department. If we continue to expand we will need a commitment of a sustained increase to the B budget.
V.K..1	Staff Development Needs	What would the impact be on the program with or without meeting this need? How does the request promote the college mission or strategic goals? Refer to mission: http://deanza.edu/about/missionandvalues.html and strategic goals (page 15 http://www.deanza.edu/emp/pdf/EMP2015-2020_11-18-15.pdf	Annual safety training is required.
V.K.2	Staff Development Needs Justification	Do you have assessment data available to justify this request for staff development? If so, provide the SLO/PLO assessment data, reflection, and enhancement and/or CTE Advisory Board input to support this need. If not, provide other data to support this need	This past year was the first year that we were provided safety training in the last 10 years. This was paid for out of special funds obtained by the PSME deans at De Anza and Foothill college. We are in OSHA violation every year without having certified safety training. This training needs to be planned and paid for on a regular basis through augmentation of the B-budget.
VI.	Closing the Loop	How do you plan to reassess the outcomes after receiving each of the additional resources requested above? N.B. For the Comprehensive Program Review the question becomes "What were the assessments showing the results of receiving the requested resources over the last five years?"	We will switch to a comprehensive program level outcome and assessment provided through an outside agency, the American Chemical Society. This is a nationally recognized society within all fields of science. For program level outcomes ACS has the "ACS Assessment Tool for Chemistry in Two-College Programs." Starting with the next program review cycle we will provide you with the results to this assessment tool. http://www.acs.org/content/acs/en/education/policies/twoyearcollege/self-study-tool.html The ACS is also developing student level outcomes. When those are published we will also attempt to incorporate those into our assessments.
	Submitted by:	APRU writer's name, email address, phone ext.	Cinzia Muzzi. Prepared by Cinzia Muzzi, Erik Woodbury, David Gray, Nga Doan, Kanny Wan, Ram Subramaniam, Homer Tong
	Last Updated:	Give date of latest update (Set next box to YES when done and ready for Dean review).	