Plans for Chemistry >> 2018 - 2019 Chemistry CHC Instructional Program Review 2018-2019

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Instructions

Please respond to the following questions. Please consult the Integrated Planning and Program Review Handbook for detailed instructions, the timeline for due dates, and the schedule for the four-year plan schedule.

1. Mission

a. Tell us your unit's mission: Provide a mission statement for your unit that clearly and succinctly describes your unit's purpose, idealistic motivations, and change it hopes to inspire.

b. Alignment with the college Mission: **Rubric Item** (Mission Alignment): The Mission of Crafton Hills College is to advance the educational, career, and personal success of our diverse campus community through engagement and learning. **In what ways does your program advance the mission of the college?**

CHC Chemistry Discipline Mission Statement

We offer all of the core classes to advance the educational, career, and personal success of our students and courses needed for transfer to the UC and CSU systems as well as courses to complete general education.

Within our department you will find an outstanding chemistry faculty striving to maintain an aggressive and well-respected chemistry program for our diverse campus community through engagement and learning. We also provide students ample contact with the instructor in a relaxed atmosphere that only a limited class size can offer.

We serve students who intend to major in such diverse fields as biochemistry and biotechnology, engineering, medicine and health sciences, biology, physics, and of course chemistry.

In what ways does your program advance the mission of the college?

The Chemistry Mission Statement is in complete alignment with the mission of the college which helps advance the mission for both.

2. Description of Program

a. Organizational Structure and Staffing

b. Describe any activities in addition to instruction that you provide.

c. Describe any alternative modes of instruction and schedules of delivery: e.g.: online, hybrid, early morning, evening services.

d. **Rubric Item**: Describe how your curriculum is up-to-date and Needs-Based. Base the description on surveys, labor market data, transfer patterns such as GE, IGETC, CSU, AA-T, or AS-T, accreditation standards, and/or articulation agreements. Consider the results of your most recent curriculum reviews in this section.

e. **Rubric Item**: Attach your scheduling matrix to show when courses in your area are offered. Click here for sample!

a. Organization (including staffing and structure)

As of 2018-2019, the Chemistry department is made up of two full-time tenured faculty members, and a third full time faculty member up for tenure Spring 2019. We are supported by a full-time lab technician and between 4-6 adjunct faculty members. The full-time faculty members are responsible for overseeing the overall department and activities. These responsibilities include: adjunct support, departmental meetings arrangements, institute SLO cycles, and departmental student recognition selection. This department is part of the Division of Biological Sciences (Chair, Sam Truong) and is part of the College of the Arts & Sciences (Dean, Van Muse).

It is notable that this year Kim Salt and Kelly Boebinger are celebrating their 20th full time year at CHC!

b. Describe any activities in addition to instruction that you provide.

Our full time (FT) faculty are very active on the CHC Committees they have been assigned to. Dr. Kim Salt has been the Chair of Curriculum for over 15 years and just this year she has added a co-chair to help in the committee activities. Dr. Rahbarnia is an active member of the Curriculum committee. Kelly Boebinger, is an active member of ETC (Educational Technology Committee. Each FT faculty member participates each semester in manning the Answer Centers, we also participate in Graduation breakfast in the form of serving our students food and Dr. Salt is a frequent performer in the Fractured Faculty Follies to entertain our graduates.

All FT faculty participates in course scheduling and we all work closely with our department chair. Our FT faculty also takes care of textbook ordering for all chemistry sections including those taught by adjunct faculty. All FT faculty have participated in hiring committees ranging from management, classified personnel, FT faculty and part-time (PT) faculty.

Our FT faculty mentors out PT faculty especially when newly hired. Dr. Rahbarnia also has directed PT faculty meetings on in-service days to help our instructors be more informed and also to provide continuity between multiple sections of the same course. Boebinger also mentored our OCHEM PT instructor.

FT faculty have met and developed continuity in syllabus, and course objectives along all courses.

A SLO data sheet was developed and implemented for each course and distributed to all FT faculty. This new adoption of this form has allowed data entry into the SLO cloud to be more efficient.

The occasional community outreach.

c. Describe any alternative modes of instruction and schedules of delivery: e.g.: online, hybrid, early morning, evening services.

Chemistry offers a variety of courses offered at a variety of times. Multiple sections of Chemistry are offered for many courses each semester, and courses start as early as 7:00 am, others end at 9:50 pm. We offer a fully online chemistry course CHEM 123: Chemistry for

Everyone, this class tends to fill quickly and we offer 2 sections per semester and usually 2 sections each summer. For CHEM 102: Introduction to Organic Chemistry, in addition to the face-to-face course, we offer Hybrid course usually one section each semester, this is where students do the lecture portion of the course online and come on campus weekly for experiments and exams. We offer the advanced chemistry courses, CHEM 212/213 General Organic Chemistry I & II, once a year, when enrollment increases we look forward to offering these courses off sequence in addition to the tradional offering.

d. Rubric Item: Describe how your curriculum is up-to-date and Needs-Based. Base the description on surveys, labor market data, transfer patterns such as GE, IGETC, CSU, AA-T, or AS-T, accreditation standards, and/or articulation agreements. Consider the results of your most recent curriculum reviews in this section.

Chemistry offers courses for chemistry majors, non-majors, students seeking an associates degree in chemistry, students wishing to transfer to allied health programs or continue on to a four year university.

All chemistry courses are articulated to transfer to CSU and UC campuses, as well as many private and out-of-state institutions.

Needs based curriculum:

Section A: Natural Sciences: CHEM 101, 102,150, 150H, 151, 151H, 212, 213,

Credit Programs:

- Associate in Science in Chemistry for Transfer (AS-T) Degree
- Chemistry - Associate of Science Degree

IGETC for Transfer to CSU and UC:

Area 5 – Physical and Biological Sciences: A: Physical: CHEM101, 102,123,150,150H, 151,151H, 212,213

CSU General Education Requirements:

B. Scientific Inquiry and Quantitative Reasoning 1. Physical Science and 3. Laboratory Activity: CHEM 101, 102, 123, 150, 150H, 151, 151H, 212, 213;

All chemistry courses are up-to-date on curriculum and six-year course revisions and all are SBCCD board approved. All chemistry courses have been approved with C-ID descriptors.

e. Rubric Item: Attach your scheduling matrix to show when courses in your area are offered.

See attachments

3. External Factors with Significant Impact

What external factors have a significant impact on your program? Please include the following as appropriate:

a. Budgetary constraints or opportunities
b. Competition from other institutions
c. Requirements of four-year institutions
d. Requirements imposed by regulations, policies, standards, and other mandates
e. Job market
   i) Requirements of prospective employers
   ii) Developments in the field (both current and future)

What external factors have a significant impact on your program? Please include the following as appropriate:

a. Budgetary constraints or opportunities

Our current annual budget is $3500. We offer an average of 46 lab sections per year with an average of 25 students per section. With an annual budget of $3500 that means each student's allotment of the budget is $3.04. That is a poor sum for our chemistry students. Constraints are the daily operational costs of reagents and lab supplies, along with increased costs are increased shipping fees and hazard fees. Replacement costs of items such as broken glassware and contaminated regents at times becomes an additional constraint.

When Kelly Boebinger and Kim Salt started working at CHC full time in 1999, the annual Chemistry budget was $4430, $4000 for instructional supplies funds, $330 for distilled water services, and $100 for annual service of the balances. Kelly Boebinger has been writing the Chemistry Annual Plans and Program Reviews since 1999. From reviewing the Chemistry Annual Plans and Program Reviews from 1999 – 2003 the chemistry department has requested an increase in the annual budget for instructional supplies funds of $1000 to $5000 annually. This did not happen and over time the budget was decreased. In the Chemistry Annual Plan 2007, we made a request to increase the Chemistry annual budget to $10,000.

In reviewing the 2009 Chemistry Program review, the Chemistry Annual Budget was then $3500. In 2018, nine years later, we still have the same annual budget of $3500.

Since 1999 we have hired one additional full time instructor and we have increased our lab course offerings tremendously especially by the addition of six sections of Organic chemistry per year when in 1999 we had just two. We were fortunate to be part of the STEM Grant awarded to Rick Hogrefe and that helped fill in some of what we were lacking and helped up get equipment for the new lab building, the problem is that those funds are now gone and we are back to the budget constraints in our day-to day budget for running our classes. We have been asked to open more sections of our lab course and we are already working on a shoe-string budget, it is less than 1999, and we are severely limited in opening new sections because of the cost of the lab sections. Our lab technician has been charged with the task of determining the cost to run labs for each of our lab courses, this information is expected to be given to administration before the end of 2019.

Once again, we request an increase of your annual budget to $10,000 annually.

b. Competition from other institutions

All colleges offer the same courses that we offer at CHC, the high demand for these courses ensures our continued enrollment. We do offer a hybrid CHEM 102 course and a 100% online chemistry course (CHEM 123) for non-majors.

c. Requirements of four-year institutions

Chemistry majors are able to complete the two-year program of General Chemistry (CHEM 150 & 151) and Organic Chemistry (CHEM 212 & CHEM 213) in two years. All chemistry courses are transferable to CSU and UC and articulation agreements are in place for many private colleges.

d. Requirements imposed by regulations, policies, standards, and other mandates

All chemistry personnel participate in the mandated annual safety programs and training. All adhere to the regulations, policies and standards set by the district and any OSHA mandates.

e. Job market

Most students taking chemistry courses plan on transferring to Allied Health Programs or to four-year institutions to compete degrees and many move on the graduate studies to become Nurses, Dental Hygienists, Nutritionists, Pharmacists, Veterinarians, and Medical Doctors.

i) Requirements of prospective employers

CHC offers an associate degree in chemistry for those employers requiring that degree. Most job opportunities for our students require additional training or education, so must students transfer to an allied health program or university.

ii) Developments in the field (both current and future)

The basics of chemistry are what is required for our department to cover, and when any new developments come up, instructors commonly include them in the curriculum.

4. Progress on Outcomes Assessment (Four-Year Question)

Refer to the SLO Cloud to evaluate the results from your program level outcomes and to develop actions reflected in your program review action plan (i.e. Question 10). **Rubric Item**: Program Learning Outcomes

a. Please summarize **Program Level Outcomes (PLO) assessment results**. Include a discussion of whether or not the program met its target for each PLO.
b. Please describe any program/course and/or instructional improvements you plan to make as a result of the PLO assessment(s).
c. What objective(s) or action step(s) will you add to Question 10 as a result of the PLO assessment(s)? If none, please explain.

a. Please summarize Program Level Outcomes (PLO) assessment results. Include a discussion of whether or not the program met its target for each PLO.

As a program we are very healthy and our SLO data supports this. We have exceeded by far the minimum number of SLOs measured and the number of courses measured that is expected our instructors and programs. According to the Program Summary Report for all our courses and the 38 sections we have evaluated the past three years, the number of students meeting the SLO Rubric of 3 or higher ranges from the lowest at 80.88% for SLO #3 to a high of 90.43% for SLO #3. As a program we have met our target for each PLO.

According to the SLO Cloud website Program Summary Report for the Period of Last 3 years (see attachments for the report), Chemistry has had 28 Reflections, 38 sections reporting and only 64 sections not reporting. That is an impressive 59.4 % of all chemistry sections reporting SLO in the SLO Cloud. Additionally each section reporting has measured all four Program SLOs. All courses reporting within the last 3 years include, CHEM 102, CHEM 123, CHEM 150, CHEM 151, CHEM 212, & CHEM 213. Since 1999 when the Chemistry department started to measure SLOs we mainly concentrated on CHEM 101, our Introduction to Chemistry course for about 15 years. As a department we agreed that we have focused on that courses enough for now and redirected our focus to all other chemistry courses. We have

evaluated ted a wide range and type of course including hybrid, 100% online, and both General and Introduction OCHEM and General Chemistry.

b. Please describe any program/course and/or instructional improvements you plan to make as a result of the PLO assessment(s).

Our reflections for or SLO evaluations have been helpful in directing our program. The most substantial change that was implemented from this data is that we saw out CHEM 150 students were not prepared to be successful. These are the reflections that helped direct our program to implement CHEM 101 as a prerequisite for CHEM 150 starting Fall 2018. Additionally, we were the only campus not having chemistry as a perquisite for General Chemistry, even our sister campus SBVC has Introductory Chemistry as a prerequisite for General Chemistry. We did develop a challenge exam that is administered through CHC Testing center.

Reflection Statements for CHEM 150:

Need a prerequisite of CHEM 101 as students are severely underprepared.

The new prerequisite should help with students performing better on SLO 1 and 2

This is a new perquisite so we do not have data to confirm this was the needed change. We look forward to evaluating the SLO data in future terms to get the research data.

c. What objective(s) or action step(s) will you add to Question 10 as a result of the PLO assessment(s)? If none, please explain

The following objective was added to Question 10 in the Program Review:

Continue to report SLO data to SLO cloud for Chemistry courses and utilizing the data and reflections to further student success.

5. Unit's Performance on Institutional Quantitative Effectiveness Indicators

Please discuss your program's performance on each data item below.
a. Instructional Program Health Evaluation Rubric

i) **Rubric Item**: Use Office of Institutional Effectiveness, Research, and Planning (OIERP) data to set a Course Completion Rate target and provide an explanation for the target that has been set. Click HERE to access your program specific data.
ii) **Rubric Item**: Use OIERP data to set a Course Success Rate target and provide an explanation for the target that has been set. Click HERE to access your program specific data.
iii) **Rubric Item**: What is your FT/PT Faculty Ratio, how is it impacting your program, and student success? Click HERE to access your program specific data.
iv) **Rubric Item**: Use OIERP data to set a WSCH/FTEF Ratio target and provide an explanation for the target that has been set. Based on Faculty dialogue what is a feasible WSCH/FTEF (productivity) target for your area? (Note: 525 may not be a realistic target for your area.) Click HERE to access your program specific data.
v) **Rubric Item**: The Fill rate target is 80% or higher. Use the data provided by the OIERP and please provide a reason for any deviation from the target. This may involve a discussion around the appropriateness of the cap and how it was set. Click HERE to access your program specific data.

a. Instructional Program Health Evaluation Rubric

i) Rubric Item: Use Office of Institutional Effectiveness, Research, and Planning (OIERP) data to set a Course Completion Rate target and provide an explanation for the target that has been set.

- For all our chemistry courses we have set the target completion rate to be 80%. We have a variety of courses that require a perquisite, some math and others chemistry courses, and only one course that doesn't have a perquisite. We feel that courses with a perquisite should ensure a higher completion rate for all chemistry students. We also keep in mind that due to just the nature of the subject material that our completion rate would be negativity effected therefore we came up with a balanced value of 80%.
- Over the last 5 years the completion rate for all chemistry courses were an average of 86.62%. See attachments for the original OIERP data. We have met our division target in all courses.

ii) Rubric Item: Use OIERP data to set a Course Success Rate target and provide an explanation for the target that has been set.

- For all our chemistry courses we have set the target Success rate to be 60%. Our courses are taken by those students wishing to have a career in Allied Health. For many this is the first science course they have taken, and chemistry seems to be a course

that students make career changes when they see that they may not be cut-out for the rigor of a degree in the sciences. We also keep in mind that due to just the nature of the subject material that our completion rate would be negativity effected therefore we came up with a balanced value of 60%.

- Over the last 5 years the Success rate for all chemistry courses were an average of 69.36%. CHEM 151 has a 5 year average success rate of 79.32% and CHEM 213 with a 5 year average of 79.58%. We have met our division target in all courses with one exception CHEM 150. See attachments for the original OIERP data.
- Professors Salt and Boebinger have been teaching chemistry here at Crafton as full time faculty for 20 years and both have seen over the last 7 years or so that our students are coming into chemistry underprepared. According to the Chemistry 2009 Program Review, our chemistry students had a 92.50% success rate from 2006-2009. In the Chemistry 2013/14 Program review, Chemistry success rate from 2012-2014 was 81.4%.
- The most noticeable decrease in success is observed for the 5 year data for CHEM 150, in 2013-14 we had a 76.2% success rate, which is low from our previous 10 years. But the data gets worse, in 2017-18 the success rate for CHEM 150 drops to a low of 55.7%. We modified our teaching techniques yet the data still showed that some of our students were underprepared and not able to pass the course. Dr. Salt noticed that for the first time she had many students repeating the course. In researching what other campuses and community college practice for their General Chemistry (CHEM 150) students, we found out that all have a chemistry prerequisite for the course. At Crafton we had just a math prerequisite, in fact, our sister campus has had a chemistry prerequisite for years. During 2017-18 the CHEM 150 curriculum was rewritten and board approved to include CHEM 101 as a course prerequisite. In fall 2018 our department first implemented the prerequisite. We look forward to seeing the data over the next few years to see if this change has made an impact on the success of our students.

iii) Rubric Item: What is your FT/PT Faculty Ratio, how is it impacting your program, and student success?

- The target is 75% or higher. According to OIERP data, chemistry over the past 5 years, the FT/PT ratio has averaged 56.08. It does not meet the target, but it is higher than the ratio during the same time of the campus. In 2014 we hired a third full-time chemistry instructor and this helped bring the ratio from the 2013-14 low of 48.2 to the current 2017-18 ratio of 62.7.
- The impact on our program is that it is often difficult to find not just qualified instructors, but also those with a passion for teaching. Most scientists that earn a Master’s degree or higher in chemistry do not want to teach at a community college nor opt to be paid the salary of a teacher when in industry there are much higher paying careers.
- As to how this impacts the success of our students, we have been fortunate that in the hiring process of our part-time (PT) faculty, Dr. Rahbarnia has taken in under her wing to review the applicants and assist our department chair Dr. Truong in the interview process to help get better qualified instructors. To demonstrate the care and level our discipline has for the success of our students, note that in fall 2018 we had a long time PT faculty member quit just days before the fall semester started. To help ensure the success of those students impacted, FT Professors Salt and Boebinger took on the additional load and taught the class so it would not have to be cancelled nor have a last minute non-vetted instructor come in to teach.
- From reviewing this data, Chemistry is adding the need for a full-time instructor with a projected need in 4 - 8 years.

iv) Rubric Item: Use OIERP data to set a WSCH/FTEF Ratio target and provide an explanation for the target that has been set. Based on Faculty dialogue what is a feasible WSCH/FTEF (productivity) target for your area? (Note: 525 may not be a realistic target for your area.)

- While looking at the data for WSCH/FTEF Ratio, keep in mind that chemistry has a lab associated with all our courses (except CHEM 123). In 2018-19 chemistry offered 22 three-hour lectures and 43 three-hour labs. Each three-hours of lecture students earn three units, while for each three-hours of lab they earn just one unit. As to load for FT instructors, each three-hour lecture is 0.2 load, while each three-hour lab is 0.147 load. This will have an impact on the WSCH/FTEF Ratio. Based on dialog between chemistry faculty we set the target for chemistry WSCH/FTEF Ratio at 500.
- According to the data provided by OIERP for the last 5 years the campus average WSCH/FTEF ratio was 448 while during the same time chemistry had an average of 518. We have met our target and have exceeded the campus average.

v) Rubric Item: The Fill rate target is 80% or higher. Use the data provided by the OIERP and please provide a reason for any deviation from the target. This may involve a discussion around the appropriateness of the cap and how it was set.

- Consistently about 93.1% over the last 5 years. We have exceeded the target fill rate of over 80%. Chemistry courses are in a high demand and we have a good reputation for having a quality program. Our courses fill early on in the registration period. In many of our courses and sections, we have recently had to turn a number of students away that wanted to add the class on the first day of class. The number of students turned away would be enough students to fill a new section. We would need an increase in our annual budget to open more sections since our course have laboratories with them that use consumable resources.
- Our courses have appropriate caps, and many of our courses have caps that are set due to contractual agreements and also for lab space and safety, changing the caps would have no effect on our fill rate.

6. Other Unit-Specific Quantitative and Qualitative Results

a. **Rubric Item**: How do your program student demographics relate to the college demographics? What are the discrepancies? – **Click HERE to view program and college demographics by year.**
b. Summarize the results of any quantitative or qualitative measures not provided in the previous question that you have chosen to gauge your program's effectiveness (e.g.: transfers, degrees, certificates, satisfaction, enrollments, Perkin's data, equity data, student research experience, student clubs, etc.) **Click HERE to access your program specific data on degrees and certificates.**
c. What improvements/changes have you implemented or do you plan to implement as a result of your analysis of the measures illustrated in 6a and 6b?

a. Rubric Item: How do your program student demographics relate to the college demographics? What are the discrepancies?

Representativeness of population served: Based on data provided from CHC OIERP we see that the chemistry discipline serves the population similar to the campus as a whole with a few minor differences. In gender, chemistry serves less male students than the campus, most likely due to more females entering the nursing and dental hygiene field, two of the main types of students taking our chemistry courses. Chemistry tends to have a slightly higher average than the campus for average age of students, we do serve a number of return students in our discipline.

b. Summarize the results of any quantitative or qualitative measures not provided in the previous question that you have chosen to gauge your program's effectiveness (e.g.: transfers, degrees, certificates, satisfaction, enrollments, Perkin's data, equity data, student research experience, student clubs, etc.)

In the four year period from 2013/14 to 2017/18, twenty-six Chemistry AS Degrees were awarded from CHC. The average each year was 6.5 degrees each year with an exceptional year of nine degrees awared 2014/15. In the five year period of 2008 - 2013 only eleven were awarded, the average award was 2.2 degrees per year. That is an increase of 295% of Chemistry degrees awarded per year.

c. What improvements/changes have you implemented or do you plan to implement as a result of your analysis of the measures illustrated in 6a and 6b?

The improvements we can make to our program is to continue to be welcoming to all types of students regardless of their background. We can also help encourage students to earn a degree in chemistry here at CHC.

7. Evaluation

Evaluation: You have already provided a description and analysis of the program in questions 1-6, please provide an analysis of what is going well/not well and why, in the following areas:

- Alternative modes and schedules of delivery (e.g.: online, hybrid, early morning, evening services, etc.)
- Partnerships (internal and external)
- Innovation and Implementation of best practices
- Efficiency in resource use

- Staffing
- Participation in shared governance (e.g., do unit members feel they participate effectively in planning and decision-making?)
- Professional development and training
- Compliance with applicable mandates

•Alternative modes and schedules of delivery (e.g.: online, hybrid, early morning, evening services): Chemistry offers courses at various times of day, early morning classes as well as late morning, afternoon, late afternoon, and evening. Chemistry also offers for our students a 100% online course (CHEM 123) for non-majors and a hybrid CHEM 102 course.

•Partnerships (internal and external):
1. The Laboratory technician has a partnership with faculty and students: Lab tech conducts tours of the stockroom to our CHEM 212 students comprising of the following:
• Location of SDS sheets and information
• Inventory of chemicals & locations including volatile liquids
• Chemical locator procedure
• Use of bomb proof refrigerator
Lab tech prepares all chemical solutions. For each experiment for each course, the tech prepared a kit will all materials needed for the experiment and included a sheet listing all chemicals needed, their locations, needed equipment and chemical preparation information.
2. In partnership with the SBCCD all faculty and the Lab Tech have participated in safety training such as Chemical Hygiene, Safety, SDS best practices, and the newer GSA labeling system.

•Innovation and Implementation of Best Practices:

- All of our CHEM 212 students participate in a "Scavenger Hunt" the first 3 weeks of the semester. They are asked to do a number of activities and tasks including:
  Research Techniques: Using old school style: Printed materials and handbooks. Comparing the researched data to new school style, using the internet and website for information. They are asked to compare the data and evaluate if the particular website and information is valid. People you need to meet: Students meet individually or in small groups and the Lab Tech gives them a tour and information about the proper use and guidelines needled in a laboratory stockroom. Students are required to make an appointment and meet individually with a CHC Transfer Advocate (Usually Sam Truong or Ruth Greyraven) in the field they wish to transfer to, and discuss with them anything they need to know about transferring. Students meet with a STEM Tutor to learn detailed information on how to use the STEM center to its full advantage.
- CHEM 213 students and CHEM 151 students participate in a research project. CHEM 213 students present their results in a poster session at the end of the term.

Chemistry utilizes the following best practices on a regular basis:

- A Clear and Common Focus: We want our students to be successful in any chemistry course they enroll in. We look for consistency in what is taught to students in all sections of CHEM 101. We have a focus on the material taught in General Chemistry and tie that information to those continuing on to Organic chemistry. Part of our common focus was to ensure that at the beginning of the semester for each chemistry lab course each instructor completes a lab safety assessment and at the end of the term a laboratory final assessment is used in all courses.
- High Standards and Expectations: We set our standards high and see that our students are reaching those goals.
- Supportive, Personalized, and Relevant Learning: We make chemistry come alive and have real word examples to help students better understand the material presented.
- Monitoring, Accountability, and Assessment: Along with the traditional assessments of exams we also have many other forms of assessment including prelab materials for labs, and quizzes in many courses. Online homework has been introduced in some sections that include immediate feedback to students.
- Curriculum and Instruction: We teach to the SBCCD Board approved curriculum.
- Professional Development: All chemistry personnel undergo professional development on a regular basis.

We have been measuring and assessing our students learning for nearly ten years. This is not a process that we do just once or twice a year, it is a dynamic process that goes on in a continual basis with our faculty. Discussion between faculty involving best practices for our students' success is happening through the year. In the past we have collected data and assessed the data for all courses taught, and we also assess the students learning in each class, and adjust our instruction to best fit the particular needs of the students in each of our courses. We now currently concentrate on fewer courses to be assessed each year for a more efficient process.

•Efficiency in resource use:
Our classes fill and close early in the registration process, and we turn a large number of students away each semester. Offering more sections would help meet student demand for our courses. Increased funding would be required for consumable chemicals and other supplies in addition to lab equipment and glassware.

•Efficiency in resource use:
We offer a minimum of 46 laboratory sections of chemistry each year. Our budget is $3,500 annually for all chemistry needs which is insufficient for all of our current chemistry needs. That calculates to $3.04 for each enrolled student per semester and then translates to about $ 0.21 per student for each experiment. Not enough to supply consumable chemicals and replace broken glassware. The cost of consumable chemicals has dramatically increased including shipping. We had a stockpile of glassware purchased when the campus opened, now that is becoming depleted and we will need to start purchasing more glassware in the near future, and our equipment is in need of replacement or updating. Each semester, we assign students to laboratory equipment drawer. Without an increase in the budget, the discipline may have to consider reducing the number of sections offered and we are limited to open more sections of lab courses.

•Staffing
The chemistry discipline currently has three full-time faculty, one full-time laboratory technician, between 4 - 6 part time faculty each semester. We are in need of an evening laboratory technician.

•Participation in shared governance (e.g., do unit members feel they participate effectively in planning and decision-making?)
For this Program Review and also previous Annual Plans and Program reviews, all chemistry faculty, full-time & part time, and support personnel such as the chemistry laboratory technician, and members of the STEM Program have had a opportunity to participate in the process. Many have choose to give input to the document such as responses to the questions in this section.

•Professional development and training
Each faculty member continues to participate in many forms of professional development each semester, including our part-time faculty. All full-time faculty members exceed the minimum required time for professional development each year, not all forms of professional development that faculty participate in are listed in the required from as per the contract.

•Compliance with applicable mandates
All chemistry faculty and the Lab Tech have participated in annual safety training such as Chemical Hygiene, Safety, SDS best practices, and the new GSA labeling system. Safety is a primary concern and all safety measures are compiled with in each laboratory and the stockroom.

• Going Well:
1. We have been very efficient with our budget and have been able to accommodate more students without compromising our standards in laboratory.

2. The use of higher technological devices such as the of the Vernier data collection system and the DigiMelt Melting Point Apparatus equipment has made experiments state of the art for students and much more efficient.

3. Changes in how students are instructed in CHEM 101 labs have added to their learning.

4. Having CHEM 101 as a prerequisite for 150 has been implemented. We want to see our CHEM 150 students become more successful.

• Not going well.
1. Over the past several years our majors chemistry class has been filling after priority B and unfortunately many of the students who have this high priority, although they have the math prerequisite are not prepared for the course. Many of them are struggling. I don't know what has changed such that these students are not prepared. The MATH 095 prerequisite is a standard prerequisite throughout most

chemistry courses so it is not a matter that we have the wrong prerequisite listed. Most of the problem is not their math skills, most students struggle with the study skills necessary to do well.

2. Staffing has been an issue the last several semesters. We have been trying to increase our sections but we are greatly limited by the number of adjunct faculty available in the area. This has been an issue for years. People who are qualified to teach in the field are not available and it is making it difficult to expand the program. Furthermore, we have been expanding by adding lab sections to our lecture section and not adding new lectures. This is adding an extra burden of giving the instructor the added responsibility of being a lab coordinator for all the different lab instructors that are teaching for the same course.

8. Vision

a. Tell us your unit's vision: Where would you like your program to be four years from now? Dream big while considering any upcoming changes (e.g.: new buildings, labs, growth, changes in the discipline etc.).
b. Alignment with the college Vision: **Rubric Item** (Vision Alignment): The Vision of Crafton Hills College is to be the college of choice for students who seek deep learning, personal growth, a supportive community, and a beautiful collegiate setting. In what ways does your program advance and align with the vision of the college?

a. Tell us your unit's vision: Where would you like your program to be four years from now? Dream big while considering any upcoming changes (e.g.: new buildings, labs, growth, changes in the discipline etc.).

Four years from now, we would like to:

- Maintain an outstanding undergraduate experience for both chemistry majors and students in courses for non-majors.
- Expand our course offerings by adding more sections of Organic Chemistry and General Chemistry.
- Develop new laboratory experiments in all courses that engage students to think critically.
- Provide mentoring and support for adjunct faculty who will become leaders of their field.
- Develop and maintain a vital, supportive and collegial work/study environment.
- Hire a fulltime chemistry instructor in the next 4-8 years.

b. Alignment with the college Vision: Rubric Item (Vision Alignment): The Vision of Crafton Hills College is to be the college of choice for students who seek deep learning, personal growth, a supportive community, and a beautiful collegiate setting. In what ways does your program advance and align with the vision of the college?

As a Chemistry Department:

- We value the development of knowledgeable and inquisitive students in the chemical professions.
- We value access to a quality education in chemistry for a diverse range of students.
- We value rigorous standards for teaching and learning.
- We value effective and innovative teaching practices.
- We value a collaborative, collegial, and cooperative teaching and learning community composed of diverse scholars.
- We value a supportive, safe and healthy working environment for students, faculty, and staff.

9. Progress on Prior Goals

Briefly summarize the progress your unit has made in meeting the goals and objectives identified in your last Four-Year Action Plan.

- **1 - Goal - Increase Student Engagement and Promote Student Sucess**
  Priority Rank: 1
  Objectives:
  - **1.1 - Objective - Increase student access to chemistry courses**

    Update and revise chemistry laboratory experiments to benefit our students throughout the year as needed.

    Priority Rank: 2
    Original Start Date: 09/01/2011 **Original End Date:** 09/01/2017
    Revised Start Date: 09/01/2011 **Revised End Date:** 09/01/2017
    Responsible Person: Chemistry Department
    Strategic Direction: 1. Student Access and Success
    Impact Type: Department

Institutional Learning Outcome: -- Pick One --

Resource Requests:

- **1.1.r1 - Consistently offer CHEM 123 each semester**
  Description

  CHEM 123: Chemistry for Everyone, is the only 100% online course offered in chemistry, offering sections each semester, including summer will provide access to students who have the need for an online class.

  Rationale

  The course fills to cap everytime it is offered. More sections offered each year, including summer would also fill. This course not only serves students who want an online class but also and serves our students with a need for a chemistry class without a math prequisite.

  Resource Type: Ongoing
  Expenditure Category: Personnel
  Funded: No
  Funding Source: 0

Actions/Activities:

- **1.1.a1 - Provide Texbooks to Students**

  Provide textbooks and study guides to CHEM 212/213 students. These textbooks and study guides are loaned to students for the year and returned at the end of the course.

  Start Date: 08/13/2007 **End Date:** 05/31/2019
  Responsible Person: Faculty & Lab Technician
  Status Code: Work is Completed and Ongoing
  Progress Description:

  This practice is continuing.

  Measurements/Documentation of Progress:

  Students have expressed appreciation in saving them money for the class.

- **1.1.a2 - Book Buy Back Program**

  Continue to partnership with CHC Bookstore to have textbooks for CHEM 101, 150 & 151 be part of the Guarantee Textbook Buy Back Program.

  Start Date: 08/09/2010 **End Date:** 05/31/2018
  Responsible Person: Faculty & Bookstore
  Status Code: Objective was Removed
  Progress Description:

  This is now handled solely by the bookstore so we are no longer involved in this process.

  Measurements/Documentation of Progress:

  None

- **1.2 - Objective - Provide Supplemental Instruction to Students**
  Priority Rank: 3
  Original Start Date: 08/13/2012 **Original End Date:** 05/31/2019
  Revised Start Date: 08/13/2012 **Revised End Date:** 05/31/2019
  Responsible Person: Faculty
  Strategic Direction: 1. Student Access and Success
  Impact Type: Department
  Institutional Learning Outcome: -- Pick One --
  Actions/Activities:
  - **1.2.a1 - Supplemental Instruction**

    Increase the overall success rate in chemistry by continuing to provide supplemental instruction in CHEM 150

    Start Date: 08/13/2012 **End Date:** 05/31/2019
    Responsible Person: Faculty
    Status Code: Objective was Removed
    Progress Description:

Objective removed

Measurements/Documentation of Progress:

None

- **1.3 - Objective - Update and revise chemistry laboratory experiments**

Priority Rank: 4
Original Start Date: 08/13/2007 **Original End Date:** 05/31/2023
Revised Start Date: 08/13/2007 **Revised End Date:** 05/31/2023
Responsible Person: Faculty
Strategic Direction: 3. Best Practices for Teaching and Learning
Impact Type: Department
Institutional Learning Outcome: -- Pick One --
Actions/Activities:

- **1.3.a1 - Revision of Lab Experiments**

This is a dynamic process, to ensure best practices in teaching, lab experiments must be evaluated for effectiveness and currency. If deficiencies are detected, then the experiments must be revised.

Start Date: 08/13/2007 **End Date:** 05/31/2023
Responsible Person: Faculty
Status Code: Work is Completed and Ongoing
Progress Description:

Each full time instructor regularly reviews the current experiments and makes revisions and even write new experiments to make sure our students are leaving our classes with the best laboratory instruction to help them be completive after transfer or in the job field.

Measurements/Documentation of Progress:

Our students understand what they read and fewer questions on procedure is asked by students during the laboratory.

- **1.4 - Objective - Continue Providing Student Use Desktop Computers**

Priority Rank: 6
Original Start Date: 01/04/2016 **Original End Date:** 12/31/2023
Revised Start Date: 01/04/2016 **Revised End Date:** 12/31/2023
Responsible Person: Faculty & Technology Dept.
Strategic Direction: 1. Student Access and Success
Impact Type: Department
Institutional Learning Outcome: -- Pick One --
Actions/Activities:

- **1.4.a1 - Continue to Provide and Maintain Student Use Desktop Computers**

  There are currently six desktop computers for student in a computer lab set-up. These will need to be replaced with updated computers in 3 - 5 years (2015). Chemistry will be moving to a new science building, and each lab would require 5 computers for a total of ten (2015).

  Start Date: 01/05/2015 **End Date:** 12/31/2023
  Responsible Person: Chemistry Department
  Status Code: Work is Completed and Ongoing
  Progress Description:

  We have desktop computers in each of the balance rooms for student use.

  Measurements/Documentation of Progress:

  NA

- **1.5 - Objective - Provide Student Use Laptop Computers**

Priority Rank: 7
Original Start Date: 09/16/2013 **Original End Date:** 12/31/2023
Revised Start Date: 09/16/2013 **Revised End Date:** 12/31/2023
Responsible Person: Technology Dept
Strategic Direction: 1. Student Access and Success
Impact Type: Department
Institutional Learning Outcome: -- Pick One --
Resource Requests:

- **1.5.r1 - Replace Outdated Laptops**
  Description

  Laptops computers will need to be replaced periodically. Currently the chemistry department has 30 laptop computers. These will need to be replaced in approximately 3 - 5 years (2016)

  Rationale

  Computers become outdated in terms of operating systems and software compatibility in a short period of time.

  Resource Type: One-time
  Expenditure Category: Other
  Funded: No
  Funding Source: 0

Actions/Activities:

- **1.5.a1 - Provide Current Software for Laptops**

  Software requirements for our students include current word processing and spreadsheet programs such as MS Word and Excel. Additional software to run the digital lab equipment includes LabPro software. Faculty will determine when new software required, and CHC Technology dept. installs programs on all laptop computers.

  Start Date: 08/03/2014 **End Date:** 12/31/2023
  Responsible Person: Faculty & Technology Dept.
  Status Code: Work is Completed and Ongoing
  Progress Description:

  CHC Tech support is doing a great job in making sure student laptops are maintained and loaded with current software.

  Measurements/Documentation of Progress:

  NA

- **2 - Goal - Other Activites Affecting Students Success**
  Priority Rank: 2
  Objectives:
  - **2.1 - Objective - Provide Personnel to Support Student Learning**
    Priority Rank: 1
    Original Start Date: 01/05/2014 **Original End Date:** 12/31/2023
    Revised Start Date: 01/05/2014 **Revised End Date:** 12/31/2023
    Responsible Person: Administration
    Strategic Direction: 3. Best Practices for Teaching and Learning
    Impact Type: Division
    Institutional Learning Outcome: -- Pick One --
    Actions/Activities:
    - **2.1.a1 - Hire Part-time Evening Technician**

      For the safety of our students and faculty, a part-time evening laboratory technician is needed for stockroom support. The technician would be for all evening sciences, not only chemistry but also the biological sciences. Our evening students and instructors are in need of support staff, this allows the instructor to devote their time to students and instruction, and increases safety in the lab room.

      Start Date: 01/05/2014 **End Date:** 12/31/2023
      Responsible Person: Administration
      Status Code: Work is Planned but not yet firmly scheduled
      Progress Description:

      CHC Chemistry has been requesting a lab technician in our Program Reviews and Annual Plans to be employed during our evening courses for well over 15 years. WE NEED NIGHT SUPPORT not only for our evening faculty but also our evening students. This will allow us to implement best practices in teaching and learning.

      Measurements/Documentation of Progress:

      Simply, there is no lab tech in the evening!

    - **2.1.a2 - Hire Full-time Chemistry Faculty**

According to the data supplied from CHC OIERP (attached see table 6), from 2008- 2013 the FTEF including overload is an average of 7.05 for these years. We have two full time professors and it is often difficult to find reliable and knowledgeable part-time chemistry instructors. The need for an additional faculty member is becoming more crutial as we expand our course offering each semester.

Start Date: 09/04/2016 **End Date:** 09/27/2023
Responsible Person: Administration
Status Code: Work is Completed
Progress Description:

Dr. Shohreh Rahbarnia was hired 2015 and she has been an excellent addition to our chemistry program. This year she will be granted tenure and we could not be happier!

Measurements/Documentation of Progress:

We hired a full time instructor.

- **2.2 - Objective - Moving to the New Science Building**
  Priority Rank: 5
  Original Start Date: 08/03/2015 **Original End Date:** 12/18/2015
  Revised Start Date: 08/03/2015 **Revised End Date:** 12/18/2015
  Responsible Person: All
  Strategic Direction: 1. Student Access and Success
  Impact Type: Division
  Institutional Learning Outcome: -- Pick One --
  Status Code: Work is Completed
  Progress Description:

  We moved into the new space 2015/16

10. Four-Year Action Plan (Goals, Objectives, Resources, and Actions)

Rubric Item: Reflect on your responses to all the previous questions. Complete the Four-Year Action Plan, entering the specific program goals (goal rubric) and objectives (objective rubric) you have formulated to maintain or enhance your strengths, or to address identified weaknesses. **In writing your objectives and developing your resource requests, take into account student learning and program assessment results.** Assign an overall priority to each goal and each objective. In addition, enter any actions and/or resources required to achieve each objective. (Click here to see a definition of goals, objectives, actions, and how they work together.)

- **1 - Goal - Activities Affecting Students Success**
  Priority Rank: 1
  Objectives:
  - **1.1 - Objective - Increase chemistry annual budget to from $3500 to $10,000 to allow growth in the department and to expand access.**
    Priority Rank: 1
    Start Date: 01/01/2019 **End Date:** 01/01/2050
    Responsible Person: Administration
    Strategic Direction: 4. Expand Access
    Impact Type: District Wide
    Institutional Learning Outcome: 1. Critical Thinking
    Resource Requests:
    - **1.1.r1 - Increase Chemistry Annual Budget to $10,000**
      Description

      Incrase Chemistry annual budget to $10,000.

      Rationale

      When Kelly Boebinger and Kim Salt started working at CHC full time in 1999, the annual Chemistry budget was $4430, $4000 for instructional supplies funds, $330 for distilled water services, and $100 for annual service of the balances.

      Kelly Boebinger has been writing the Chemistry Annual Plans and Program Reviews since 1999. From reviewing the Chemistry Annual Plans and Program Reviews from 1999 – 2003 the chemistry department has requested an increase in the annual budget for instructional supplies funds of $1000 to $5000 annually. This did not happen and over time the budget was decreased. In the Chemistry Annual Plan 2007, we made a request to increase the Chemistry annual budget to $10,000.

In reviewing the 2009 Chemistry Program review, the Chemistry Annual Budget in 2009 was $3500. In 2018, nine years later, we still have the same annual budget of $3500.

Since 1999 we have hired one additional full time instructor and we have increased our lab course offerings tremendously especially by the addition of six sections of Organic chemistry per year when in 1999 we had just two. We were fortunate to be part of the STEM Grant awarded to Rick Hogrefe and that helped fill in some of what we were lacking and helped up get equipment for the new lab building, the problem is that those funds are now gone and we are back to the budget constraints in our day-to day budget for running our classes. We have been asked to open more sections of our lab course and we are already working on a shoe-string budget, it is less than 1999, and we are severely limited in opening new sections because of the cost of the lab sections. Our lab technician has been charged with the task of determining the cost to run labs for each of our lab courses, this information is expected to be given to administration before the end of 2019.

It is our understanding that our sister campus, SBVC's chemistry department, has an annual chemistry budget for Instructional funds of $30,000.

Once again, we request an increase of your annual budget to $10,000 annually.

Resource Type: Ongoing
Expenditure Category: Instructional Supplies (4300)
First Year Cost/Savings: $10,000.00/$0.00
Second Year Cost/Savings: $10,000.00/$0.00
Third Year Cost/Savings: $10,000.00/$0.00

Actions/Activities:

- **1.1.a1 - Increase Chemistry Annual Budget to $10,000**

When Kelly Boebinger and Kim Salt started working at CHC full time in 1999, the annual Chemistry budget was $4430, $4000 for instructional supplies funds, $330 for distilled water services, and $100 for annual service of the balances.

Kelly Boebinger has been writing the Chemistry Annual Plans and Program Reviews since 1999. From reviewing the Chemistry Annual Plans and Program Reviews from 1999 – 2003 the chemistry department has requested an increase in the annual budget for instructional supplies funds of $1000 to $5000

annually. This did not happen and over time the budget was decreased. In the Chemistry Annual Plan 2007, we made a request to increase the Chemistry annual budget to $10,000.

In reviewing the 2009 Chemistry Program review, the Chemistry Annual Budget in 2009 was $3500. In 2018, nine years later, we still have the same annual budget of $3500.

Since 1999 we have hired one additional full time instructor and we have increased our lab course offerings tremendously especially by the addition of six sections of Organic chemistry per year when in 1999 we had just two. We were fortunate to be part of the STEM Grant awarded to Rick Hogrefe and that helped fill in some of what we were lacking and helped up get equipment for the new lab building, the problem is that those funds are now gone and we are back to the budget constraints in our day-to day budget for running our classes. We have been asked to open more sections of our lab course and we are already working on a shoe-string budget, it is less than 1999, and we are severely limited in opening new sections because of the cost of the lab sections. Our lab technician has been charged with the task of determining the cost to run labs for each of our lab courses, this information is expected to be given to administration before the end of 2019.

Once again, we request an increase of your annual budget to $10,000 annually.

Start Date: 01/01/2019 **End Date:** 01/01/2050

Responsible Person: Administration

- **1.2 - Objective - We need to hire a 19-hr PT employee to serve as an afternoon/evening stockroom technician.**

  Priority Rank: 2

  Start Date: 01/05/2014 **End Date:** 12/31/2023

  Responsible Person: Administration

  Strategic Direction: 4. Expand Access

  Impact Type: Division

  Institutional Learning Outcome: Not Applicable

  Resource Requests:

  - **1.2.r1 - Hire Part-time Evening Lab Technician**
    Description

    We need to hire a 19-hr PT employee to serve as an afternoon/evening stockroom technician.

Rationale

This has been a request in every Program Review and Annual plan from at least 2007 to present , just review all annaul plans and Program Reviews for evidence. We currently do not have any evening support in the lab and stockroom for our evening students and instructors. This will help in lab efficiency and laboratory safety. We have made an agreement with the Dean of Sciences to share the Lab Technician with other science evening labs for best efficiency if necessary.

Resource Type: Ongoing
Expenditure Category: Classified Unit Member Non-Instruction (2181)
First Year Cost/Savings: $30,000.00/$0.00
Second Year Cost/Savings: $30,000.00/$0.00
Third Year Cost/Savings: $30,000.00/$0.00

Actions/Activities:

- **1.2.a1 - Hire Part-time Evening Technician**

  For the safety of our students and faculty, a part-time evening laboratory technician is needed for stockroom support. The technician would be for all evening sciences, not only chemistry but also the biological sciences. Our evening students and instructors are in need of support staff, this allows the instructor to devote their time to students and instruction, and increases safety in the lab room.

  Start Date: 01/05/2014 **End Date:** 12/31/2023
  Responsible Person: Administration

- **1.3 - Objective - Hire full-time chemistry instructor in the next 4-8 years.**
  Priority Rank: 8
  Start Date: 01/01/2023 **End Date:** 01/01/2028
  Responsible Person: Administration
  Strategic Direction: 4. Expand Access
  Impact Type: District Wide
  Institutional Learning Outcome: 1. Critical Thinking
  Resource Requests:

  - **1.3.r1 - Hire full-time chemistry faculty**

Description

Hire full-time chemistry instructor in the next 4-8 years to meet 75/25 FT/PT faculty ratio and help us with student success and expand access by opening more sections.

Rationale

As of this Program review, the FT/PT Faculty ratio is well below the target (75%) and is currently at 56.08%. Finding qualified part-time faculty in chemistry has always been a challenge.

Resource Type: Ongoing
Expenditure Category: Contract Classroom Inst. (1100)
First Year Cost/Savings: $45,000.00/$0.00
Second Year Cost/Savings: $45,000.00/$0.00
Third Year Cost/Savings: $45,000.00/$0.00

Actions/Activities:

- **1.3.a1 - Hire full-time chemistry faculty**

  Hire full-time chemistry instructor in the next 4-8 years to meet 75/25 FT/PT faculty ratio and help us with student success and expand access by opening more sections.

  Start Date: 01/01/2023 **End Date:** 01/01/2028
  Responsible Person: Administration

- **2 - Goal - Increase Student Engagement and Promote Student Sucess**
  Priority Rank: 2
  Objectives:
  - **2.1 - Objective - Provide Student Use Laptop Computers**
    Priority Rank: 3
    Start Date: 09/16/2013 **End Date:** 12/31/2023
    Responsible Person: Technology Dept
    Strategic Direction: 1. Promote Student Success
    Impact Type: Department
    Institutional Learning Outcome: 1. Critical Thinking
    Resource Requests:

- **2.1.r1 - Replace Outdated Laptops**
  Description

  Laptops computers will need to be replaced periodically. Currently the chemistry department has 30 laptop computers. These will need to be replaced in approximately 3 - 5 years

  Rationale

  Computers become outdated in terms of operating systems and software compatibility in a short period of time.

  Resource Type: One-time
  Expenditure Category: Instructional Supplies (4300)

Actions/Activities:

- **2.1.a1 - Provide Current Software for Laptops**

  Software requirements for our students include current word processing and spreadsheet programs such as MS Word and Excel. Additional software to run the digital lab equipment includes LabPro software. Faculty will determine when new software required, and CHC Technology dept. installs programs on all laptop computers.

  Start Date: 08/03/2014 **End Date:** 12/31/2023
  Responsible Person: Faculty & Technology Dept.

- **2.2 - Objective - Update and revise chemistry laboratory experiments**

Priority Rank: 4
Start Date: 08/13/2007 **End Date:** 05/31/2023
Responsible Person: Faculty
Strategic Direction: 1. Promote Student Success
Impact Type: Department
Institutional Learning Outcome: Not Applicable
Actions/Activities:

- **2.2.a1 - Revision of Lab Experiments**

This is a dynamic process, to ensure best practices in teaching, lab experiments must be evaluated for effectiveness and currency. If deficiencies are detected, then the experiments must be revised.

Start Date: 08/13/2007 **End Date:** 05/31/2023

Responsible Person: Faculty

- **2.3 - Objective - Increase student access to chemistry courses**

Update and revise chemistry laboratory experiments to benefit our students throughout the year as needed.

Priority Rank: 5

Start Date: 09/01/2011 **End Date:** 09/01/2017

Responsible Person: Chemistry Department

Strategic Direction: 1. Promote Student Success

Impact Type: Department

Institutional Learning Outcome: 1. Critical Thinking

Actions/Activities:

- **2.3.a1 - Provide Texbooks to Students**

  Provide textbooks and study guides to CHEM 212/213 students. These textbooks and study guides are loaned to students for the year and returned at the end of the course.

  Start Date: 08/13/2007 **End Date:** 05/31/2019

  Responsible Person: Faculty

- **2.4 - Objective - Continue Providing Student Use Desktop Computers**

Priority Rank: 6

Start Date: 01/04/2016 **End Date:** 12/31/2023

Responsible Person: Faculty & Technology Dept.

Strategic Direction: 1. Promote Student Success

Impact Type: Department

Institutional Learning Outcome: 1. Critical Thinking

Actions/Activities:

- **2.4.a1 - Continue to Provide and Maintain Student Use Desktop Computers**

There are currently six desktop computers for student in a computer lab set-up. These will need to be replaced with updated computers in 3 - 5 years. Each balance room would require 5 computers for a total of ten.

Start Date: 01/05/2015 **End Date:** 12/31/2023

Responsible Person: Chemistry Department

- **2.5 - Objective - Continue to report SLO data to SLO Cloud for Chemistry courses and utilizing the data and reflections to further student success.**
  Priority Rank: 7
  Start Date: 01/01/2019 **End Date:** 01/01/2024
  Responsible Person: Faculty
  Strategic Direction: 1. Promote Student Success
  Impact Type: Department
  Institutional Learning Outcome: 1. Critical Thinking

- **3 - Goal - Laboratory Safety**
  Priority Rank: 3
  Objectives:
  - **3.1 - Objective - Purchase a Wood Laminate Corrosives Undercounter Safety Cabinet**
    Priority Rank: 9
    Start Date: 01/01/2019 **End Date:** 01/01/2024
    Responsible Person: Administration
    Strategic Direction: 7. Develop Programs and Services
    Impact Type: Division
    Institutional Learning Outcome: Not Applicable
    Resource Requests:
    - **3.1.r1 - Purchase Safety Cabinet**
      Description

      Wood Laminate Corrosives Undercounter Safety Cabinet, Holds Thirty-Six 2-1/2 L Bottles, 2 Doors, Blue

      MODEL NO: 24150 $2018.00

      https://www.justrite.com/wood-laminate-corrosives-safety-cabinet-cap-forty-nine-2-1-2-liter-bottles-2-doors-blue.html

Manufacturer: Justrite / Distributor: Fastenal

Rationale

To safely store chemicals in our stockroom

Key Benefits

Durable and highly chemical-resistant

Safely store highly corrosive liquids

Long-lasting wood construction

Haz-Alert™ reflective labels

Resource Type: One-time
Expenditure Category: Non-Instructional Supplies (4500)
First Year Cost/Savings: $2,200.00/$0.00

Actions/Activities:

- **3.1.a1 - Purchase Safety Cabinet**

  Wood Laminate Corrosives Undercounter Safety Cabinet, Holds Thirty-Six 2-1/2 L Bottles, 2 Doors, Blue.

  MODEL NO: 24150 $2018.00

  https://www.justrite.com/wood-laminate-corrosives-safety-cabinet-cap-forty-nine-2-1-2-liter-bottles-2-doors-blue.html

  Manufacturer: Justrite / Distributor: Fastenal

  Key Benefits

  Durable and highly chemical-resistant

Safely store highly corrosive liquids

Long-lasting wood construction

Haz-Alert™ reflective labels

Start Date: 01/01/2019 **End Date:** 01/01/2024
Responsible Person: Administration

11. Comments

This space is provided for participants and managers to make additional comments. Comments are not required.

There are no comments for this plan.

12. Supporting Documents

This question is for attaching supplemental materials. Supporting documents are not required.

- Course Outcomes assesment Sched. Matrix CHEM 2018-2021.xlsx
- Crafton Hills and San Bernardino Valley College Completion and Success Rates (4).pdf
- PPR_CHEM2_Data_20132014.doc
- WSCH__FTEF Ratio Dashboard.pdf
- Chemistry degrees awarded 2013 to May 2018.docx
- sched-matrix-CHEM 2018-2021.xlsx
- Crafton Hills and San Bernardino Valley College Degrees and Certificates Awarded.pdf

- Fill Rate Dashboard.pdf
- 1314_PPR_DataRequest Chemistry Degrees by year.xlsx
- Demographics.pdf
- Crafton Hills and San Bernardino Valley College Completion and Success Rates (2).pdf
- SLOCloud™ Three year 2018.pdf
- Crafton Hills and San Bernardino Valley College Completion and Success Rates (3).pdf
- SLO and Course Map for Chem Courses Update Version 2019.doc
- Crafton Hills and San Bernardino Valley College Completion and Success Rates (1).pdf
- CHC Chemistry Discipline Mission Statement 2019.doc