

Las Positas College
ANNUAL PROGRAM REVIEW TEMPLATE
Review of AY 2011-12

Name of Program	Division	Author(s)
CHEMISTRY	STEMPS	M. Ansell, A. Flores, R. Grow

INSTRUCTIONS:

1. This Annual Program Review covers the time frame academic year 2011-2012.
2. The planning should be for the academic year 2014-2015.
3. Use the Save As feature in Word to save this template with your program name, so that you do not overwrite the original template (e.g., Bio, math, EOPS)
4. In each section, click in the box under the instructions and fill in your information. The box will expand as you type. If a section is not pertinent to your program enter N/A in the box; do not leave it blank.
5. To see how other programs completed sections in the Annual Program Review, visit the Examples Template on the PR website. The examples are from a variety of programs and may give you ideas of how to respond for your own program.
6. When you have completed the form, run the spell-checker (**click inside the text in the first box**, then click on the Review tab and find Spell-Check in the far left corner of the ribbon).
7. Please address your questions to your Program Review Committee representatives or the PR co-chairs Jill Carbone and Teri Henson. Concerns, feedback and suggestions are welcome at anytime to PRC representatives or co-chairs.
8. Instructions for submitting your Annual Program Review will be available at the start of the fall semester.

STATEMENT OF PURPOSE:

- Review and reflect on the student experience, with the goals of assessing and improving
 - student learning and achievement
 - services for students
 - program effectiveness.
- Provide a forum for each program's findings to be communicated to Administration
- Create written records of what is working well, what can be improved, and specific plans for implementing chosen improvements.
- Collect information that will contribute to institutional assessment and improvement.

I. MISSION

State the current program mission

(A mission statement should address the unique role and scope of the program. Consider the operating mission of your program. Identify specific purposes within your program (e.g., certificates, degrees, general education, matriculation, assessment). Avoid vague, overbroad language.)

Our Mission is to serve the three diverse groups of students at Las Positas College:

- Transfer students majoring in the sciences and engineering; preparing for careers in medicine,

pharmacy, or dentistry; or following a teaching pathway at primary, secondary, or post-secondary level.

- AA/AS and Certificate students enrolled in programs requiring knowledge of chemistry, for example, nursing, dental hygiene, etc
- Students completing general education course requirements

We strive to provide an outstanding set of classes taught by great teachers in small classes with high standards, attention to safety, and a focus on student success.

The Program offers the following degrees:

AS - Chemistry (Transfer Preparation)

AA – Chemistry Education

The mission of Las Positas College is:

Las Positas College is an inclusive, student-centered institution providing learning opportunities and support for completion of transfer, degree, basic skills, career-technical, and retraining goals.

(NOTE: this is the draft mission statement, currently under review.)

Discuss how the program supports the college mission.

The Chemistry Program is integral to the Mission of Las Positas College. The Chemistry Program strives to be a high-quality, comprehensive educational program that will foster growth and success, both in its students and in its community. Our Program mission parallels the College mission: we serve and support students for completion of transfer, degree, career-technical, and retraining goals.

Many professional careers require the knowledge and training obtained in Chemistry courses. This includes careers in science, engineering, medicine, and technology. Chemistry provides the backbone for training in nursing, biotechnology, dental hygiene, and many other fields that do not require a Bachelor's Degree. In addition, there is a Chemistry course for students who come to the college with inadequate preparation for the traditional first year course in General Chemistry. Chemistry offers baccalaureate-level courses directed primarily for student transfer in science, engineering, and medical fields. We also offer courses for students completing programs in nursing, dental hygiene, viticulture, and other A.A./A.S. and certificate programs, or who are seeking either employment or training for jobs in water quality control. Many of the students in our classes for retraining goals are post-baccalaureate students who are taking courses to refresh their content and lab knowledge and review for national entrance exams. We also have a new degree for students preparing to become teachers.

II. PROGRAM ANALYSIS

A. Courses (For Instructional Programs Only)

1. Will any course outlines be revised or updated in the academic year 2014-2015?

(Highlight the appropriate box to type in an X.)

YES NO

If yes, in the table below, please list which courses will be revised or updated and the reason for the revision.

(Click in the box under Courses to start entering information. Tab to move to the next box. Tab in the last box to create a new row.)

Course(s)	Reason for Revision
1A, 1B, 12A, 12B, 30A, 30B, 31	<p>The course outlines for these courses were last reviewed and updated in the Spring of 2010. They will be up for a 5-year review and Title V Update in the Spring of 2015. 1A was last updated in Spring 2012 but we will likely include it in this batch proposal.</p> <p>1A, 1B, 12A, and 12B have been approved for C-ID with no change in course outlines. However, the C-ID descriptors for 30A, 30B, and 31 have not come out yet. If necessary, we will review the course outlines for these for C-ID approval.</p>
30B	<p>Currently, 30A is the only allowed prerequisite for 30B. Based on the number of waivers we have received, we plan to add Chem 31 and 1A as approved prerequisites for 30B. Chem 31 and 1A cover the general chemistry material covered in 30A at the level of depth needed in Chem 30B.</p>

2. Will new curriculum (*e.g.*, course outlines, degrees) be submitted to the Curriculum Committee for the academic year 2014-2015?

YES NO

If yes, please describe briefly what new curriculum is planned.

<p>We plan to create an AS – T in Chemistry as soon as the transfer model curriculum is finalized. This might take place before the 2014-2015 depending on when the TMC is released.</p> <p>There have been discussions of creating a new chemistry course for non-majors. However, with limited availability of FTEF, this has been put on hold until we are able to provide all of the courses our transfer and allied health students need and we have sufficient FTEF.</p>
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B. New Initiatives (AY 2014-15)

Are any new initiatives planned for the academic year 2014-15?

(Examples of new initiatives include, but are not limited to: new degrees or certificates, new pathways, new outreach efforts.)

YES NO

If yes, please describe briefly what new initiatives are planned.

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C. SLOs/SAOs

1. Status of course SLOs/SAOs and assessments for AY 2011-12.

(Since the Program Review process is beginning in 2013 and the assessments for AY 2012-13 will not be complete, analyze the assessments for the AY 2011-12). Click in the box under Number of Courses Offered. Press Tab to move to the next box. Press Tab at the end of the row to create a new row.

Number of Courses Offered (AY 2011-12)	Number of Courses with SLOs (AY 2011-12)	Number of Courses Assessed within the last TWO years (AY 2010-11, AY 2011-12)
7	7	7

2. How frequently have course SLOs/SAOs been assessed? (e.g: every semester, every other semester, once a year.)

(This is a summary; it is not a list of courses and their assessment frequency.) Click in the box and begin typing. The box will expand as you type.

Every course has been assessed every semester except for 12A, offered only in the fall semesters, and 12B, offered only in the spring semesters.

3. Status of program-level SLOs/SAOs and assessments for AY 2011-12.

Number of degrees/certificates offered	Number of degrees/certificates with SLOs	Number of program level SLOs/SAOs
2	2	4

4. Analysis of SLO/SAO data for AY 2011-12.

(Attach a summary of the program's AY 2011-12 SLO/SAO data as an appendix.)

- a. Please describe the program-wide dialogue on assessment results, including assessment of distance education courses. Where would one find evidence of this dialogue?

(This section concerns the type and variety of dialog regarding assessment results, not the assessment results themselves. For examples of evidence, consider: meeting notes, program coordinator's records of dialogue, or email.) For each of these questions, click in the following box and begin typing. The box will expand as you type.

Informal and formal discussions of SLO's and program data took place at every discipline meeting (May 17, Aug 16th, and Sept. 11). Handwritten notes were taken during some of these meetings. There have also been e-mail exchanges that pertain more to assessment processes rather than results.

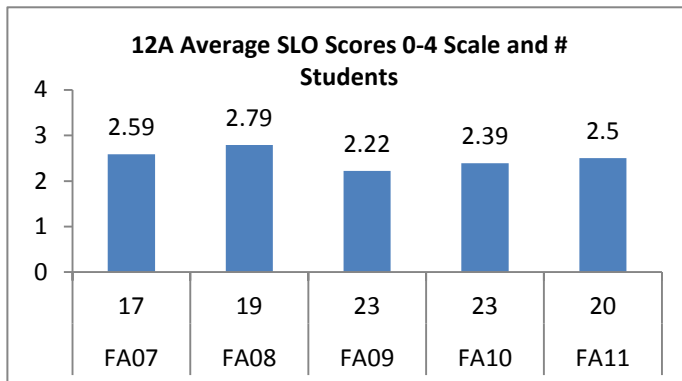
In particular, the Sept 11 meeting focused on going over SLO data and Student Data. Dr. Grow reported on a partial summary of SLO data that the faculty members went over. He also later e-mailed a written summary of the SLO assessment results summarized above. The state of our assessment results (discussed below) prompted us to also evaluate the current implementation process for our SLO's. The results of this discussion are summarized below.

- b. Please summarize what was learned from the assessments, including distance education courses. How will these results be used for improvement/s?

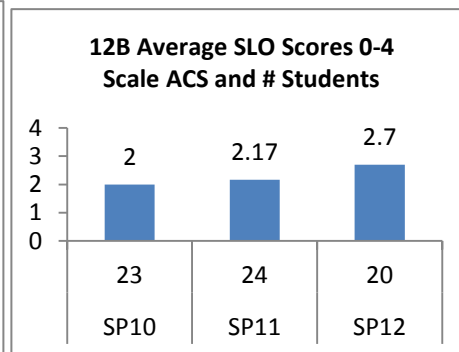
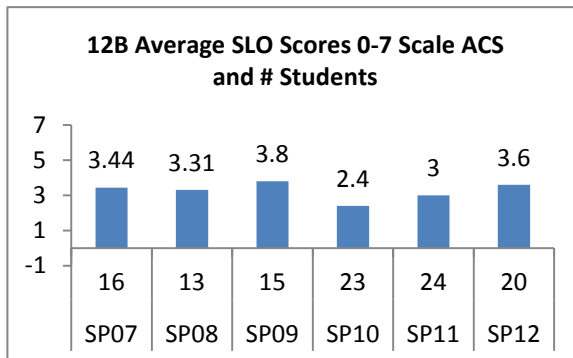
(Please provide at least two paragraphs. One paragraph should address face-to-face assessments, the other paragraph should address distance education assessments. If the course is taught in both face-to-face and distance education modes include a paragraph comparing the assessment results.)

The 3 full-time faculty met to go over SLO assessment results (Fall 2006 – Spring 2012) and summary reports prepared by Dr. Grow.

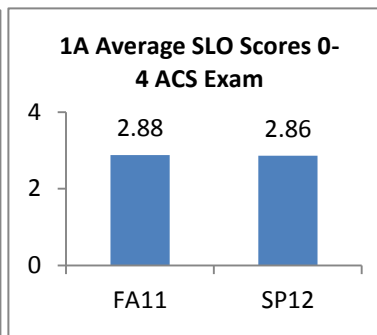
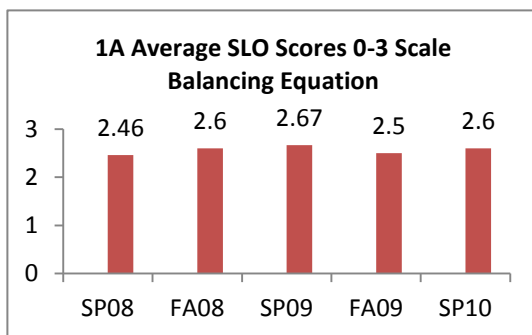
What did we learn from these assessment results?



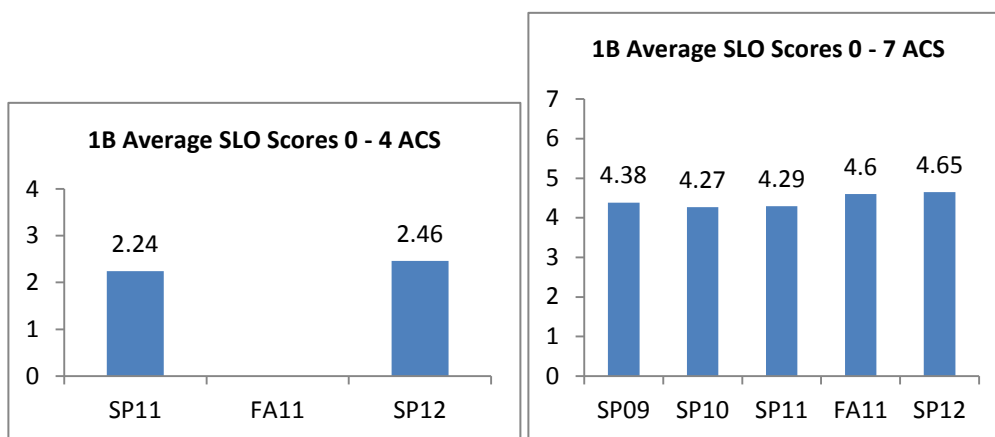
There seems to be no general trend in the last 5 years in the average SLO scores although the last 3 fall semesters show continuous improvement. There is a correlation with class size, however: higher averages are correlated with smaller class sizes.



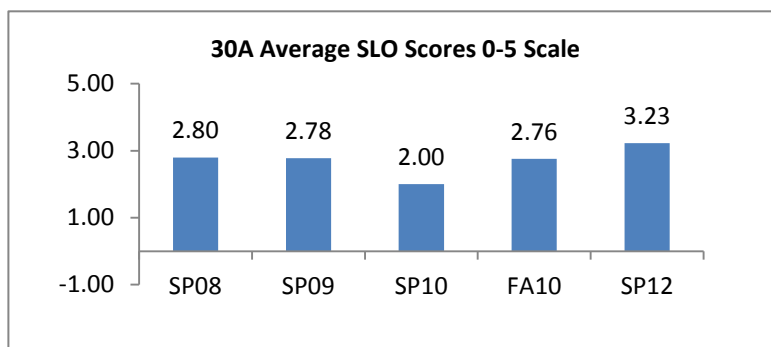
Just like with 12A above, again there seems to be no general trend in the last 5 years but the last 3 fall semesters show continuous improvement. The same correlation with class size is also apparent: higher averages are correlated with smaller class sizes.



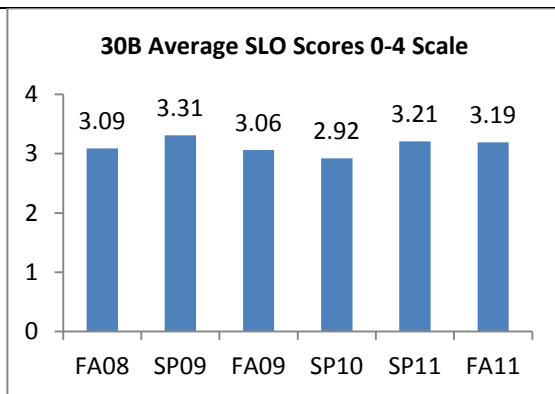
Our SLO data for the previous 3 years for 1A was based on how well the students balanced a chemical reaction. In the fall 2011 we started evaluating the students based on the American Chemical Society test for the first semester of general chemistry. This data should be more relevant than the previous SLO but the scores cannot be compared to what was done in the past. In either series, the average scores have remained flat. We clearly need more ACS data to warrant an analysis. Some of our adjuncts have participated in administering the ACS exams so we anticipate a bigger sample in the next round of.



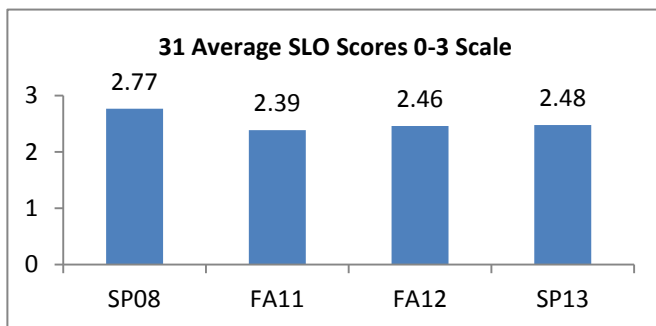
Both data sets are based on ACS exam scores. For both series above, there is a general increasing trend for the average scores, indicating increasing percentile scores in the ACS. For the 0-7 scale, our students are scoring a higher average compared to the national average (equivalent to a 3.8 in this scale). For the 0-4 scale, our students also score higher averages compared to the national (2.0 in this scale). We will continue to use the 0-4 rubric scale. We also discontinued looking at the scores on just the kinetic section of the ACS standardized test.



No general trend for the last 5 years. The last 3 years however show significant and continuous improvement in average scores. The average in 2012 was an average of 3 sections. In 2010 it was only one section. This SLO will have to be changed to a 0-4 scale to match the rest of the college. We also plan to add more SLO's for this course.



We have a great deal of data for the 30B course. No clear trend other than the score seems to be rather constant with a high average out of 0 – 4 point scale. This might warrant adding another SLO.



The scores are relatively high out of a max of 3. There is a curious drop between the first and second semester data but fairly flat after that. We clearly need more assessment data for this course. We also plan to write a new SLO's with a 0 – 4 point scale.

Some general conclusions:

1. The data collected for many of our courses are not directly comparable on a semester-by-semester basis for various reasons. First, we continue to improve upon our SLO's and so the assessed learning outcomes themselves have changed over the years. This has resulted in a smaller data set for each SLO. Secondly, the scoring scale has changed over the years ranging from 0-3, 0-5, 0-7, and 0-4. While we are satisfied with the current averages, it is difficult at this point to make any conclusion on general trends except to say that for most of the courses, there has been either a flat or continuous improvement in the last three semesters worth of data.
2. For both the 12A and 12B courses, the SLO data seem to correlate better SLO scores with fewer students in the class (capped at 20).

Some of the improvements we would like to implement based on these results are:

1. We will continue to work to improve and make uniform our SLO's and the assessment scales so that we can do a better long-term analysis.
2. We plan to develop new SLOs with a 0 – 4 scale (particularly for Chem 31, 30A, and

30B). We have discussed using the ACS diagnostic exam to assess SLO's for Chemistry 31 students.

3. We are requesting a reduction in the maximum cap for students enrolling in the 12A/12B series as data indicates improved student learning with smaller class size.

- c. To what extent will, and how, do assessment results support resource requests for AY 2014-15?

Although as stated above, no long-term analysis can be done, the average score for each SLO is at least at a satisfactory level. Our goal, of course, is continuous improvement to raise the average scores. Our resource requests primarily arise from laboratory budget and equipment needs. Chemistry is primarily an experimental science. Our lab budget and equipment allow us to provide students with experiments that reinforce in a visual and tactile way the concepts and principles on which they are assessed. For example, the national standards set by the American Chemical Society include skill- and concept-learning in laboratory techniques.

In particular, we have doubled our offering of 12A and 12B to provide access to transfer students in biology and chemistry. Based on actual scores in the American Chemical Society and our SLO data, we believe that students are served best when the number of students in the course is capped at 20. With 2 sections offered, this should still allow for more students completing the series than before.

- d. What are the general plans for assessments in the upcoming academic year AY 2014-15 (*i.e.* additional assessments or reassessment)?

We will continue to assess every course. We plan to make uniform our SLO's for the same course and the scoring scale. We also plan to expand the SLO's for the Chem 30A and the Chem 31 courses. We will put effort into engaging part-time instructors in the SLO process. Their involvement is critical as they teach half the number of sections every semester.

D. Student Data

1. Analyze the student data provided by the Office of Institutional Research (<http://www.laspositascollege.edu/researchandplanning/ProgramReview.php>) and other data as appropriate (for example: SARS-TRAK data, library student surveys).
 - a. Please describe the program's dialogue about the student data. Where would one find evidence of this dialogue?

(This dialog should be occurring as you write your Program Review of 2011-2012. Examples of evidence may include: agenda or minutes from workshops or meetings, internal reports. Smaller programs may want to consider discussing their data with related programs, their Dean, the Institutional Researcher or, for academic programs, adjunct faculty in the program.) For each of these questions, click in the following box and begin typing. The box will expand as you type.

Informal and formal discussions of SLO's and program data took place at every discipline meeting (May 17, Aug 16th, and Sept. 11). Handwritten notes were taken during some of

these meetings. There have also been e-mail exchanges that pertain more to assessment processes rather than results.

On September 11, the 3 full-time faculty spent some time going over the discipline data set provided by Rajinder Samra. We went over the data sets page by page, noting any obvious trends and changes. We hypothesized reasons for some of these and possible correlations. The results of this discussion are summarized below.

- b. Please summarize what the program learned from the student data. How will these results be used for improvement/s and planning?

(Briefly discuss trends or significant findings regarding student retention, success rates, different cohorts of students, etc. Student data may suggest the need for changes in course offerings, scheduling, teaching methodology, outreach, processes, etc., or may lead to the creation of a new SLO/SAO.)

Headcount and enrollment: The head count increased until the fall of 2009 when we started to cut courses. We tried to cut mostly double sections into single sections to maintain the availability of our courses.

Demographics: We noticed a decrease in the older students (30 and older) and an increase in the younger students (19 and 20 year olds). We believe that it was harder for older students to come back to college and register with low priority. The percentages for the different race-ethnicities taking our courses remain steady.

Enrollment status and unit load: We noted a drop in the percentage of First-Time any college students, perhaps due to the same low priority numbers. This increased the percentage of continuing students and the full-time students with 30 -59 units.

Student Goal: The majority of students we serve continue to be transfer students, with a slightly increasing percentage (48% to 61% from Fall 2007 – 2011). This reinforces the mission of the Program as stated above.

Enrollment Management: Our productivity dropped from a high of 484.6 in 2009 to 433.0 most likely due to converting double sections to single sections (double sections have higher productivity because the lecture FTEF is the same for a single section) to maintain access despite cuts in sections. Productivity numbers for lab classes are low to begin with due to lab size restrictions. To compensate for fewer sections, we have continued to increase our fill rate which has averaged over 100% for the last three years.

Student Performance: We continue to maintain a fairly stable course success rate averaging 74% from Fall 2007 – Fall 2011. It is notable that our Chem 30A classes continue to lag behind in success rates as shown in the disaggregated data below. Our course completion rates have seen a slight increase from 77% in Fall 2007 to 83% in Fall 2011. While our success rates continue to be higher than the College average, our retention rates are lower by a few percentage points.

	12A	1A	1B	31	30A	30B
AVERAGE SUCCESS RATES FA07-FA11	80.8	77.6	77.4	75.8	66.8	78

Here are some improvements and plans to address some of these results:

1. We will continue to request increased FTEF to restore classes that have been cut since Fall 2009. The size of our waitlists reinforces this need as well. With increased FTEF, we should be able to restore some single sections to double sections to restore previous higher productivity numbers.
2. With the new policy on repetition, we anticipate our retention rates going up which may affect success rates. We plan to monitor how this will pan out and expect to request for more resources to support student success in our classes, e.g. more tutoring, more sections of courses offered so we can stick to a 100% fill rate without turning away too many students.
3. Look into possible causes for and solutions to the lagging success rates in the Chem 30A courses. This is the course that has the lowest math prerequisite which could be a factor: either the math proficiency expectations are too high or we may need to raise the prerequisite to Math 55.

- c. To what extent, and how, do the student data results support resource requests?

(If relevant, briefly explain how your student data may be improved by acquiring new or additional resources (eg: faculty, classified personnel, instructional equipment, facilities) that you plan to request. You will be asked to provide more detailed information on the resource request forms; this is just a brief summary.)

Our decreased headcounts, increased fill rates, and reduced productivity support our request for restoration of previous FTEF allocations.
The increase in transfer students served supports doubling the 12A/12B sections.
Increased fill rates despite reduced number of sections support request for increasing the chemistry budget.

2. Enrollment Management (**Instructional programs only**)

- a. What total FTEF was approved for the program in 2012-13? This data is found in your Discipline Plans.

11.8 FTEF

- b. If this amount differs from 2011-12, describe what changes have occurred.

(To find Total FTEF for AY 2011-2012 consult the Enrollment Management data on the IR website. (<http://www.laspositascollege.edu/researchandplanning/ProgramReview.php>). If your allocation was less than the previous year, comment on the types of courses that were cut. If the allocation was more, indicate which classes were added and why.)

The total FTEF for 2011-2012 is the same.

- c. Describe and explain any changes you anticipate in course offerings for the academic year 2014-15.

We will continue to offer another section each of the 12A/12B series. We have been approved for more FTEF in Spring 2014 to split a double section of Chem 30B to a single section and to add an evening section of Chem 31. We hope to continue this in 2014-2015. We hope to add another section of Chem 1A in 2014-2015.

E. Human Resources (in AY 2011-12)

1. Please complete the following table.

(Enrollment Management data is posted on the IR website:

<http://www.laspositascollege.edu/researchandplanning/ProgramReview.php>).

Total FTEF*	FTEF from Full-Time Faculty*	% FTEF from Full-Time Faculty **
6.43	11.8	54%

* If your program consists of multiple rubrics (eg: Anatomy, Ecology, Microbiology) sum values from all rubrics

** If your program consists of multiple rubrics, use the following equation to calculate the % FTEF from Full-Time Faculty: Divide the FTEF from Full-Time Faculty by the Total FTEF and multiply by 100.

Type of Personnel	Number	Shared? With whom? If shared, state % of time assigned to the program	No. of hrs/wk	No. of mo/yr
full-time classified staff*	1 Science Education Technician	40% Chemistry – 60% Biological Sciences	40	12
	1 Lab Tech II	40% Chemistry – 60% Biological Sciences	40	12
	1 Lab Tech II	40% Chemistry – 60% Biological Sciences	40	10
regular hourly classified staff**	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
student assistants	1-3 (varies from week to week)	40% Chemistry – 60% Biological Sciences	4-20	4-12

* full-time: 20 hrs/wk (50%) to 40 hrs/wk (100%)

** regular hourly: 18 or fewer hrs/wk (45% or less)

2. Will human resources be adequate for the academic year 2014-15?

YES NO

If No, briefly describe. Provide any data which support these needs.

The new science building (1850) opened in the fall of 2012 and our lab technicians went from supporting 4 lab classrooms in one building to 8 lab classrooms plus a greenhouse and additional space in two separate buildings. We requested 2 additional lab technicians to meet this need but there was no hiring in 2012 (despite our placing on the top of the priority list). During the 2012-13 year we applied for the same two positions and one of them was approved. That position is scheduled to be filled in the Fall of 2013. We still need 1 additional lab tech. We will be requesting a fourth additional FT 12 month Lab Tech II position for 2014-15.

3. Are there Staff Development needs for the academic year 2014-15?

YES NO

If yes, elaborate. Provide any data which support these needs.

We would like to request an increase in staff development funding to allow chemistry faculty and staff to attend the annual American Chemical Society National Meetings and other similar conferences. In the past, staff development funds have been limited to \$300 or less per event. This maximum amount is not sufficient to even cover the cost of registration for ACS members (\$445). It would be much appreciated if staff development funding can help faculty attend these meetings, especially when locally held and not much travel expenses are required.

We also would like staff development funding to allow full-time and part-time faculty and laboratory techs to attend regular safety training as required by law.

F. Technological Resources

Are there any **new** technological needs for the academic year 2014-15?

(Do not discuss your existing technology, including replacements and repairs of existing technology. DO discuss new needs.)

YES x NO

If yes, briefly describe. Provide any data which support these needs.

(Examples of relevant data might include: enrollment information related to the growth of your program, workforce demands/trends, obsolete or outdated equipment and/or software.)

Yes, we will be requesting a GC/MS instrument as explained in Section III, Part D, Need #3.

G. Facilities, Equipment, and Supplies Resources

Are there any **new** facility, equipment or supply needs for the academic year 2014-15?

(In this section consider new facilities, equipment and/or supplies that are needed to support your program. This does not include your current items that need replacement. Definitions of these terms may be found in the glossary.)

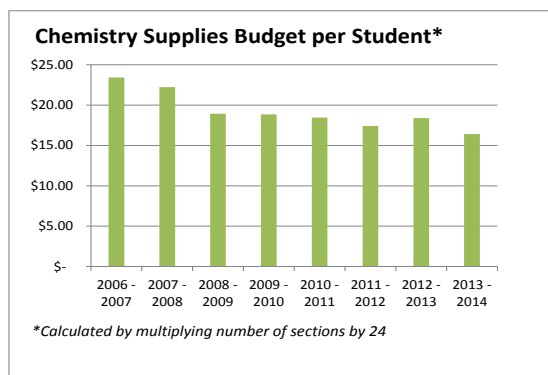
YES NO

If yes, briefly describe. Provide any data which support these needs.

(Examples of relevant data might include: data on program's growth, change in curriculum, ADA regulations, etc.)

FACILITY NEED FOR 2014 – 2015: We will need new paint inside and out in building 1800 and new flooring in rooms 1802, 1803, 1805 and 1806.

SUPPLIES NEED FOR 2014-2015: Because of the experimental nature of chemistry, the program requires chemical, glassware, and equipment supplies (e.g. fume hood covers). Due to increased sections and fill rates and price inflation, we need an augmentation to our current supplies budget to restore previous cuts. We are grateful to be able to offer another section each of 12A and 12B but these additional sections require additional and more expensive glassware equipment and chemicals. Our allotted funding, which has decreased and stayed flat even in times of increased enrollments and cost inflation, will not be able to sustain the current needs of the program. Our supplies budget per student is in need of restoration as shown by the following data:



EQUIPMENT NEED FOR 2014-2015: We will be requesting a GC/MS instrument as explained in Section III, Part D, Need #3.

H. Financial Resources

1. Is there a Program budget for the academic year 2014-15? (Include any co-curricular funds)

YES

NO

If yes, please briefly describe amount and general uses.

There is a supplies budget and a maintenance and repair budget covered under section G. A summary of the Chemistry supplies budget is given below by Ms. Gerry Gire:
 2010 - 2011 spent \$13,736
 2011 - 2012 spent \$11,706 (\$1,293 taken away)
 2012 - 2013 spent \$12,800 (\$200 left over)
 2013 – 2014 allocated \$13,000 for supplies and \$4200 for equipment repair and maintenance

Historically, we have spent all the money given us by the Dean with the exception of one year 2011/12 where we were asked to stop all spending by the end of January due to the

deteriorating state budget situation. For six months, we managed by reducing quantities of reagents used, doubling up student groups, forgoing expensive labs, not replacing glassware, running our inventory of chemicals down, and borrowing from another college if the item was essential. This was an extreme year and we definitely did not offer standard lab curriculum at all times. During the 2012/13, we also had summer closure for the building remodel and closed the labs early by one week to prepare for the move.

2. Are there any **new** financial needs for the academic year 2014-15?

(Examples of new financial need might include: new funding needed for upcoming events, new initiatives, changes in curriculum that require new training beyond what staff development can provide, request for release time for something new, etc.)

YES NO

If **yes**, briefly describe. Provide any data which support these needs.

Funding to purchase a GC/MS.
Staff development funding for safety training.

I. Other information pertinent to the program.

In the space below, discuss any other information which is pertinent to the program. Examples include

- Internal or external impacts on program
- (*e.g.*, mandates from state, curriculum changes in one program that impact another, loss of resources due to budget cuts, changes in college mission, goals, etc.)
- Other internal or external data (*data not discussed above*)

We will be requesting a reduction in our enrollment cap for the 12A and 12B classes from 24 to 20 students. This is strongly recommended by the American Chemical Society specifically for the Organic Chemistry courses. It will also align our organic chemistry curriculum at the same level of quality of teaching and learning experience at Chabot College where the cap for O. Chem classes has been 18 for the past several years.

III. SUMMARY

A. Summarize objectives accomplished since the Program Review Update (2012)

(The 2012 Academic Program Review Updates can be found on the Grapevine

<http://grapevine.laspositascollege.edu/programreview/ipr2010-11.php>

(Click on your discipline name.) Your brief discussion may include objectives accomplished since the 2010 program review, even if not discussed in the Update.)

Under the objective "**OBJECTIVE 1: Relieve overcrowding, increase the safety, and improve the instructional technology in the Chemistry labs**", the following action items have been accomplished:

1) *Action Item: Support the planning, equipment, and use of a third chemistry lab (1807) and renovated prep/stockroom, 1802, and 1805 labs.*

The new 1807 lab is fully functional except for necessary repairs to reduce hood noise. All the necessary renovations, additions, and repairs have been accomplished for the old labs and stockroom.

6) *Action Item: Equip the third lab with standard lab and safety equipment and student locker supplies*

The new 1807 chemistry lab is now completely equipped with the standard equipment and supplies through FF&E funding.

7) *Action Item: Enable the lab staff to support an increased number of lab facilities, lab sections, and evening supervision by hiring 2 more full-time lab technicians and more student workers to make-up for limited stockroom personnel when the second stockroom opens up in the new building.*

Only 1 new position has been approved. The position will be filled by the end of Fall 2013. We will be requesting a fourth lab tech in Fall 2014.

8) *Action Item: Request for increase in classroom availability to accommodate the new sections of chemistry we plan to offer*

The new science building comes with 4 new lecture classrooms. However, they are designed to accommodate comfortably only a maximum of 50 students.

Under the objective **“OBJECTIVE 2: Expand the Program to meet current and future demands for highly impacted courses”**, the following action item has been partially accomplished:

2) *Action Item: Offer at least 1 new section of: 30A, 31, 1A, 12A, and 12B*

For Fall 2013, we have added one new section of 12A. For Spring 2014:

- we have been allotted extra FTEF to split a double section of 30B into a day and an evening section to allow more access by microbiology and physiology students.
- we are adding 1 new section of 12B
- we are adding 1 new section of 31

B Summarize objectives not accomplished since the program review update (2012) and why not.

(Your brief discussion may include objectives not accomplished since the 2010 program review, even if not discussed in the Update.)

Under the objective **“OBJECTIVE 2: Expand the Program to meet current and future demands for highly impacted courses”**, the following action items have not been accomplished:

3) *Action Item: Increase the number of full-time faculty who can participate in the maintenance and development of the Program by hiring one new full-time faculty*

We have not accomplished this due to lack of funding and restricted growth in FTEF

and FTES. We believe that, at this point, there are other programs that have a more pressing need to add another faculty.

4) *Action Item: Enable the Chemistry coordinator to handle increased responsibility by increasing the allocated CAH from 1.0 to 3.0*

The CAH for the coordinator was actually reduced to 0.7. We would like to at least restore it to 1.0.

5) *Action Item: Increase the chemistry supplies budget to support new sections and a 3rd lab*

This has not been accomplished due to lack of funding (see discussion above under supplies and financial resources sections). However, we are grateful that we have been allocated an equipment and repair budget (discussed above).

C. What are the objectives for the academic year 2014-15?

*(Summarize **briefly** the objectives you plan to accomplish or begin in 2014-15. You will describe your plan to implement/achieve these objectives in the Program Effectiveness Plan in Part IV.)*

We currently have no new objectives for 2014-2015 but would like to work on fully accomplishing the objectives stated in the last program review and update.

D. For all needs identified in Part II, summarize how these needs will affect student learning/achievement and impact the program.

(This brief summary should capture the effects on students and the program if the needs are met or unmet.)

Need #1 : Fourth FT 12 month Lab Tech II position

This position supports learning in the lab which is tied to all of our SLO's. They ensure that labs are conducted safely and with the necessary equipment and chemical reagents so that students can focus on learning. With the new science building, our lab techs frequently have to run back and forth between the 2 buildings to support multiple labs. It also affects the flexibility to schedule lab classes to ensure maximum access for students.

Need #2: increased staff development funding

This will provide faculty and staff the opportunity to update their subject expertise, stay current in the field, and interact with other colleges. We are also requesting staff development funding for legally required safety training.

Need #3: Gas Chromatograph/Mass Spectrometer

The GC/MS is standard chemical instrumentation found in many Organic Chemistry and even General Chemistry lab curricula across the nation. It is a primary research tool that will align our transfer students' lab experience with that of students in 4-year institutions. In addition, it is part of the ACS national exam for the Organic Chemistry series which is the instrument we use to assess our SLO's for Organic Chemistry. This instrument used to be cost-prohibitive to purchase but is now more reasonable to purchase and has therefore become a more widely used instrumentation in both academia and industry.

Need #4: Increase in supplies budget

This primarily supports our lab curriculum which plays a big role in ensuring that students meet course learning outcomes. With a new section of the 12A/B series and restoring cuts in sections, it is crucial that we get funding back up again to maintain the same level of lab learning experience for students. We have had to make sacrifices before as described above.

Need #5: Increase in number of lecture classrooms that can hold more than 48 students

The new 1850 classrooms are restricted to holding a maximum of 48 students, the typical cap for a double section. With a maximum capacity of 48, the 1850 classrooms will significantly restrict access for students to double sections that normally take a few extra students in each section above the 48 student cap.

Need #6: Reduction in enrollment cap for 12A/12B from 24 to 20 students

This is strongly recommended by the American Chemical Society specifically for the Organic Chemistry courses. This course requires labs that involve flammable chemicals and high pressure systems, more complex equipment set-up, and expensive glassware and instrumentation. It is very expensive to replace even small pieces of glassware and instrumentation requires more maintenance. Reducing the cap not only improves pedagogy and safety but also is more cost-effective in the long run. It will also align our O. Chem curriculum at the same quality of teaching and learning experience at Chabot College where the cap for O. Chem classes has been 18 for the past several years.

Need #7: Creation of a non-majors course such as environmental chemistry

As mentioned earlier, this is a new course that we would like to create once demand for allied health and transfer courses has been met. A non-majors course would benefit a wider range of audience. An environmental chemistry course is being proposed which would complement and supplement the popular new EVST and EVSCI degrees. In creating the course outline, we will be consulting the C-ID descriptor (C-ID CHEM 106B Environmental Chemistry, with Lab) for environmental chemistry with a lab component.

Continue to the next page to complete the form.

Name of Program	Division	Author(s)
CHEMISTRY	STEMPS	Flores, Grow, Ansell

IV. PROGRAM EFFECTIVENESS PLAN

Instructions: In the table below, indicate how you plan to measure the effectiveness of each objective summarized in Part III and the resources needed.

Suggested: 0-5 Objectives (focus on a few)

Rank	Priority 1=essential 2=important 3=nice to have	Objective	SLO's/SAO's linked to objective	College goal(s) linked to objective†	How will effectiveness be measured?	Category*	Resources needed	Committee
1	1	We will continue to work on the action items for Objective 2 stated above.	<i>This objective covers all the necessary resources to support continuous improvement in ALL of our SLO's.</i> <i>This objective also will help improve student transfer rates.</i>		<i>Improved transfer rates.</i> <i>Continuous improvement in SLO scores for all of our students.</i>	<i>Human Financial Facilities Supplies Equipment</i>	<i>See action items above not accomplished (Section III, Part B).</i>	<i>Faculty Prioritization</i> <i>Resource Allocation</i>
2	Click here to enter text.		Click here to enter text.		Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
3	Click here to enter text.	Click here to enter text.	Click here to enter text.		Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
4	Click here to enter text.	Click here to enter text.	Click here to enter text.		Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.

Name of Program	Division	Author(s)
CHEMISTRY	STEMPS	Flores, Grow, Ansell

5	Click here to enter text.	Click here to enter text.	Click here to enter text.		Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
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*human, technological, facilities/supplies, financial, other

‡When College Goals become available, this column will be activated.