

Las Positas College  
PROGRAM PLANNING UPDATE (Instructional) AY 2015-2016

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

## INSTRUCTIONS:

1. This Program Planning Update covers the academic years 2012-2013 and 2013-2014.
2. The planning should be for the academic year 2015-2016.
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. Please use your program's catalog rubric and this format when naming your document:  

Rubric INS PPU 15\_16  
e.g., ESL INS PPU 15\_16
4. If the document displays in large type with only File, Tools, and View tabs at the top of the page, select **View, Edit Document**. You will then be able to type where it says "Click here to enter text" and you will be able to click on the check boxes to select them.
5. 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.
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 Chair Karin Spirn. Concerns, feedback and suggestions are welcome at any time to PRC representatives or co-chairs.
8. Instructions for submitting your Program Planning Update will be available at the start of the fall semester.

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## I. STUDENT LEARNING OUTCOMES

Review of academic years 2012-13 and 2013-14

### SLO Assessment Review

Review your program's SLO assessment results through spring 2014 and respond to the following questions.

1. Discuss how assessment results indicate success in student learning. Identify results that indicate a need for improvement.

**For our 1A our criterion for success is:**

1. Greater than 35% of students achieving a score of 3-4 (65th percentile and above)
2. at least 65% in the 2-4 range (35th percentile and above)

Our analysis indicated:

1. The number of students in 3-4 range (65th percentile and above) has a much wider spread ranging from 42-81% and has averaged 65% but again no consistent trend noted from one semester to the next.
2. From FA11-SU14, the % of students achieving a score of 2 and above (35th percentile and above) has ranged from 94-100% and has averaged 98% although the data did not show any consistent trend.

Actions to be taken:

1. We will continue to assess this SLO and ensure that we are meeting the specific expectations that the Program has set. It seems that a wider spread is expected for the 3-4 range as this range includes the highest achievers which could fluctuate from one semester to the next.
2. Add a new SLO involving lab skills and use of instrumentation.

**For 1B our criterion is:**

1. Greater than 30% of students achieving a score of 3-4 (70th percentile and above).
2. at least 70% in the 2-4 range (30th percentile and above).

Our analysis indicates:

1. The number of students in 3-4 range (70th percentile and above) has a much wider spread ranging from 25-50% and has averaged 43% but again no consistent trend noted from one semester to the next.

For the 8 semesters of data available, the % of students achieving a score of 2 and above (30th percentile and above) has ranged from 78-91% and has averaged 85% although the data did not show any consistent trend.

Actions to be taken:

1. We will continue to assess this SLO and ensure that we are meeting the specific expectations that the Program has set. It seems that a wider spread is expected for the 3-4 range as this range includes the highest achievers which could fluctuate from one semester to the next. The Program will discuss and agree on the norming table to use to assign percentile to ensure that analysis of raw scores reflect the national norm percentiles for the new exam.
2. Add a new SLO involving lab skills and use of instrumentation

**For 12A our criterion is:**

1. Increasing % of students in the 3-4 range (only minor error to complete mechanism).
2. >65% above the 3-4 range.

Our analysis indicates:

1. Generally improving % of students in the 3-4 range.
2. >65% in the last two semesters assessed.

Actions to be taken:

1. Continue to assess due to small sample number and to validate trend of increasing %.
2. Add a new SLO to assess.
3. Add a new SLO involving lab skills and use of instrumentation.

**For 12B our criterion is:**

1. Greater than 30% of students achieving a score of 3-4 (70th percentile and above).
2. at least 70% in the 2-4 range (30th percentile and above).

Our analysis indicates:

1. From SP13 - SP14, there is a general increase in the % of students getting a score of 3-4 (70th percentile and above) from 30% to 43.5%.
2. Also, the number of students scoring 2-4 (in the 30th percentile or above) has gone from 90% to 96% from SP13 to SP14.

Actions to be taken:

1. Continue to assess and monitor achievement of criteria for success.
2. Add a new SLO involving lab skills and use of instrumentation.

**For 30A the criterion is:**

1. Increasing % of students in the 3-4 range.
2. >70% above the 3-4 range and >50% for the 2-4 range.

Our analysis indicates:

1. In the 2 semesters this SLO has been assessed using the 0-4 rubric, only 67% and 69% have achieved a score of 3-4.
2. However, >50% have achieved (67% and 79%) a score of at least 2.

Actions to be taken:

1. We will continue to assess as we are very close to achieving the desired results for this SLO.
2. We will be adding a new SLO to assess that involves quantitative understanding of solution concentrations and preparation.
3. Add a new SLO involving lab skills and use of instrumentation.

**For 30B the criterion is:**

1. Increasing % of students in the 3-4 range.
2. >70% above the 3-4 range and >50% for the 2-4 range.

Our analysis indicates:

1. In the 7 semesters this SLO has been assessed, the % of students achieving a score of 2 or above has ranged from 83-97% and has averaged 91% with no consistent trend noted.
2. The % of students who has achieved a score of 3-4 has ranged from 65-83% averaging 78%.

Actions to be taken:

1. The data shows that students generally are able to achieve this SLO. We plan to assess a new SLO starting SP 2015.
2. Add a new SLO involving lab skills and use of instrumentation.
3. Add a new SLO involving concepts of nomenclature, functional groups, and physical and chemical properties.

**For 31 our criterion is:**

Greater than 80% achieving a score of 2 or higher.

Our analysis indicates:

In the 4 semesters we have assessed this SLO, the % of students achieving a score of at least has ranged from 84-98% with an average of 89%. Not surprising as the concept involved is fairly straightforward to teach and to learn.

Actions to be taken:

1. The assessment of this SLO is going to be discontinued as students seem to have good grasp of the concept.
2. Add a new SLO involving lab skills and use of instrumentation.
3. We will implement a new SLO in FA 2014 which will be assessed using the ACS Diagnostic Exam currently used to assess a student's eligibility for 1A.

2. Discuss how distance education courses assessment results compare to face-to-face courses, if applicable? (*Respond to this question if your program has distance education courses.*)

N/A

3. Discuss how your discipline, or someone in your discipline, made changes in pedagogy as a result of SLO assessment results.

There have been no changes in pedagogy as a result of SLO assessment. We have been changing or increasing our SLOs get a more detailed view of what changes we might make to our pedagogy.

4. Give an example of a change in the number of units and/or lab hours based on assessment data, if applicable.

N/A

5. Did your program discover the need for additional resources (for AY 2015-16) based on the assessment results?      YES       NO

If yes, please explain.

We have seen a slight drop in our chemistry 12B average scores on the SLO as our course enrollment increased to the cap of 24. We suggested dropping the course caps to 18 from 24 which is recommended by the American Chemical Society for this level chemistry class. We also recommended that we add a second section due to the increased demand for the class. We now have two sections with a cap of 24. We would like to see this dropped to 18 to help the students get the attention they need in the lab class and increase the safety in the classroom for all.

### SLO Process

1. Describe how your program reaches consensus when writing student learning outcomes that are used in multiple sections.

My program offers only one section of each course.

We have individually written SLOs for different courses we teach and discussed them with our full-time faculty at department meetings and through e-mails. We all have input to the writing and have usually agreed unanimously. We do have three full-time faculty and would probably go with the majority if we have different ideas.

2. Describe how your program reaches consensus when developing and evaluating assessment results for student learning outcomes that are used in multiple sections.

My program offers only one section of each course.

We developed our SLOs with different scales in the beginning. We have since modified our assessment scale to match the institutional scale developed in the SLO committee. We have also changed our assessment scale to bring our chemistry 1A, 1B and 12B into the same rubric. These changes have been discussed between the three of us. We work individually and together communicating in discussions, department meetings and through e-mails.

3. What methods does your program use for documenting SLO related discussions? Check all that apply.

Program emails

Program meeting minutes/agendas

Blackboard/other website

Other (please describe):

Our department meetings are usually done without agendas or minutes. We usually have a list of topics and things that have to be done. We try to record dates and discussions in notes after the meetings.

## II. PROGRAM ANALYSIS

Review of academic years 2012-13 and 2013-14

Review the student data provided by the Office of Institutional Research and any additional data your program has collected. Then respond to the sections below.

#### A. Data Review

If applicable, summarize any **changes** in your program's data since the Annual Program Review of 2011-12 or observed significant trends that will affect program planning or resource requests.

**NOTE:** Only include changes that affect student learning, program planning or resource requests.

Latino students did seem to increase: For the fall of 2011 – 2013 it changed from 18% - 18% - 21% and in the spring the change was 21% - 19% -23%. Probably due to an overall increase of the Latino students for the college as a whole.

Transfer students changed from 80% - 80% - 85% in the fall semesters while the spring went from 80% - 81% - 83% which seems to be a good trend. This may be due to the early fill rate of the classes by students who take the classes seriously. They have also increased the number of classes the students need to transfer.

Success rates for fall went from 72% - 75% - 77% for the spring 79% - 78% - 82%. This trend also looks good and may be due to the same reason as the transfer rate increase.

The completion rate follows the same increase. For the fall 84% - 84%- 84% but the spring went from 88% - 89% - 92%.

The %FTEF from Full-Time instructors for the fall went from 63% in 2011 to 53% in 2012 (the drop seen in 2013 was due to sabbatical leave). The spring showed the same drop from 2012 to 2013 changed from 66% - 54% (we had a decrease in 2014 due to sabbatical leave).

We also noted a fill rate above 103% - 106% for both years since the Annual Program Review.

The increase in transfer rate serves to reinforce the program goal of ensuring that our curriculum matches or exceeds that of a 4-year university. In terms of course content, our SLO's for the major's classes are reflective of how we are doing compared to the nation through the use of the ACS National Exams. In terms of lab curriculum, we will continue to put an emphasis on lab skill development and instrument use to match or exceed that of a 4-year university. To ensure that the actual rate matches that of the number of transfer students, we need to provide the resources needed for student success in the classes and timely completion. An important resource is availability of tutors. We also need to ensure that our chemistry budget and equipment funding source is increased to meet the materials (chemicals, glassware, and

equipment) need for offering a robust lab curriculum.

**B. Program-Set Standard for Successful Course Completion Rates**

Your program-set standard for successful course completion rates (i.e., number of grades of ‘A’, ‘B’, ‘C’, ‘CR’, and ‘P’ divided by total grades) is calculated by averaging successful course completion rates for your program over a five-year period and then multiplying that result by 95%.

In order to determine if you have achieved your program-set standard for successful course completion rates for a given year (e.g., 2012-13), you will need to assess if your program met or exceeded 95% of the previous 5-year average (i.e., 2007-08 through 2011-12) for your program; these calculations are done for you (*see links below*).

1. What was your program-set standard for successful course completion rates in 2012-13 and 2013-14?

	<b>Program-Set Standard for successful course completion</b>	<b>Did you meet your program-set standard? (Yes or No)</b>
2012-13	<a href="http://tinyurl.com/mmfwgqfe">http://tinyurl.com/mmfwgqfe</a>	Yes
2013-14	<a href="http://tinyurl.com/q6dah55">http://tinyurl.com/q6dah55</a>	Yes

2. If your program did not meet your program-set standard, discuss possible reasons and how this may affect program planning or resource requests.

Both were yes.

**C. Curriculum Review**

1. Review your program’s current curriculum. If applicable, describe any internal or external impacts which will affect your curriculum plans for 2015-16.

We may update the course outlines due to Title V and the 5 year updates..

**D. Human Resources**



1. Have there been changes in the number of full-time or part-time faculty associated with your program since the Annual Program Review of 2011-12? If yes, briefly describe the changes.

The full-time instructors have not changed.

The part-time instructors have increased in the fall of 2013 from 5 to 6. It also increased in the spring of 2014 to 7. The changes may be due to semester leaves for the full-time instructors.

2. Have there been changes in the number of full-time or part-time classified staff associated with your program since the Annual Program Review of 2011-12? If yes, briefly describe the changes.

In the spring of 2014 the number of full-time classified staff increased by one. This was due to the opening of a new science building and the classified staff now covers two stockrooms (one for chemistry and one for biology).

3. If applicable, describe how the changes indicated in 1 and 2 have impacted student learning?

The extra classified staff does make the labs taught run move smoothly. This does improve the students understanding of the material.

#### **E. Other information pertinent to the program**

We would like to reduce the cap for our 2 organic chemistry classes to 18 to insure safety and learning environment in those classes. This may need one more section of chemistry 12A to supply the demand for this class.

### **III. PLANNING**

#### **A. Planning Update**

Summarize your program's plans, initiatives, and objectives accomplished since the Annual Program Review of AY 2011-12 (include accomplishments for the academic years 2012-13 and 2013-14).

1. We have created an AS – Teaching chemistry.
2. We have added a second section of organic chemistry.
3. We are continuing to request increased FTEF to restore classes cut since 2009.
4. We have purchased a GC/MS instrument which should arrive soon.
5. We have increased the classified staff by one.
6. We have had the outside of the building painted.
7. We have added an extra chemistry 1A in the fall and an extra chemistry 1B in the spring.
8. We have upgraded the locks for the locker drawers, dramatically decreasing the maintenance needs.

### B. Program Planning for AY 2015-16

As appropriate for your program, please address each of the following areas. For each area, describe your program's plans, initiatives, and objectives for the academic year 2015-16. Focus on how planning will impact student learning or the student experience at Las Positas College.

1. SLO assessments. NOTE: 100% of courses in your disciplines should be assessed a minimum of once every two years. As a guideline, each program should be assessing 25% of its courses every semester.
  1. How does your program plan to use assessment results for the continuous improvement of student learning? Examples might include (Your responses may vary.):
    - changing number of units/lab hours
    - changing pedagogy/curriculum
    - changing assessments

In section I.1. of this document, we have discussed the actions we plan to take with our SLOs. We are modifying and adding new SLOs for all of our classes.

2. Have your assessment results shown a need for new SLOs? YES  NO

If yes, in the table below, state the number of courses in your program and estimate the percentage of courses for which your program will write new SLOs.

Number of Courses	Estimated Percentage for which new SLOs will be written
7	100%

3. What percentage of courses will your program assess in the next academic year (2015-16)?

100%
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4. In order to budget to pay part-time faculty to work on SLOs during the academic year 2015-16, estimate the number of part-time faculty in your program and the percentage of them who are likely to participate in the SLO process in 2015-16.

Estimated Number of Part-time faculty	Estimated Percentage who will participate in the SLO process
6	65%

#### 4. Curriculum

a. Considering the criteria of relevance, appropriateness, achievement of course objectives, currency, and future needs and plans, will your program be making any changes to **existing** curriculum to address any of these criteria? If yes, please describe the changes and your program's reasons for the changes. Please provide any data which supports your program's reasons for the changes to your curriculum. Include a discussion of how the changes will improve student learning.

<p>I do not think we will be changing our curriculum but we will try to add the use of more technology in our courses, where it benefits the students learning. One faculty is working with physiology and microbiology faculty on incorporating microbiology and physiology concepts into conceptual questions and quantitative problems for the Chemistry 30A courses. A majority of students take Chemistry 30A as a pre-requisite for these biology courses. We are hoping that using these concepts will help "prime" students and lead to a more seamless transfer of conceptual knowledge and skills. We are implementing some green chemistry labs to make the students aware of the changing philosophy of chemical manufacturing and material development.</p>
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- b. Will new curriculum be submitted to the Curriculum Committee for the academic year 2015-2016? If yes, please describe briefly what new curriculum is planned and the rationale for the new curriculum. Please provide any data which supports your reasons for the new curriculum. Include a discussion of how the changes will improve student learning.

We may present updated course outlines as the 5 year update mandate of Title V demands.  
We plan to work on the Chemistry 30B course outline to add 1A and 31 as prerequisites.

#### 5. General Program Planning

Use this area to describe any program plans, initiative, or objectives your program wishes to accomplish in 2015-16 and their impact on student learning or the student experience. Focus on what the plans are and how they are to be accomplished (not resources needed).

We plan on increasing the amount of technology that is used in our courses to help the students understand the material. We will start using the GC/MS when it arrives and will increase the use of our nmr in organic chemistry. We are using more e-books and on-line support for our courses. I would like to see if the use of a smart text would help the learning experience of our organic chemistry students. We have been adding some microscale labs in the general chemistry courses and it might be nice to increase the number of microscale labs we do. This microscale labs increase the safety in the lab and the amount of chemicals we need to purchase.

We have been working with the Biology group to develop protocols for student participation, faculty responsibilities, lab tech expectations, and funds distribution for Honors' Projects.

We would like to reduce the cap in our organic chemistry classes to 18 to increase the safety in the labs and improve the learning environment. Our decreased headcounts, increased fill rate, and reduced productivity support our request for restore and increased FTEF.

#### IV. Resource Requests for AY2015-16

Complete all areas that apply to your program's resource needs for 2015-16 (**not all areas apply to all programs**).

For each request, in the rationale section:

- Describe how meeting this request will improve student learning or the student experience.
- Provide any data or evidence which supports this request.

##### A. Enrollment Management

1. Request: New FTEF. Indicate amount being requested.

We would like to increase our FTEF by about .5 to 1 to restore and increase our level to before the 2009 reductions.

2. Rationale for request(s).

Our fill rate for the two years being reviewed (fall 2012-Spring 2014) shows a average fill rate of 104%. The demand for our transfer classes continues to increase.

##### B. Human Resources

1. Request: New or replacement faculty position(s).

We have no immediate need for a new faculty but if we continue to increase the number of classes we teach, we will need to add a new faculty in the future.

2. Rationale for faculty position request(s).

N/A

3. Request: Classified staff position(s) (for example, new or replacement classified staff position(s) or increasing classified hours/position level).

We may need to add an additional part-time classified or a full-time classified as the number of courses increase.

4. Rationale for classified staff position request(s).

We may start running more labs on Mondays and Wednesdays to add these classes. We also need to make sure that while there are classes in the chemistry labs there is at least one person on staff in the stockroom. In case of emergencies this is very important.

**C. Financial**

1. Request: Maintenance of, or increase in, existing program budget (e.g., for supplies, etc.).

Our supply budget increased for the first time in 9 years. We have reduced the amount of some of the chemicals used by going to microscale labs but we still need maintain our supplies, and obtain new supplies as we change some of our labs. If we purchase more microscale glassware and increase the number of sections we offer our budget should increase and increase above just the inflationary rate in the bay area.

We need a steady source of funding to replace lab equipment and glassware and instrumentation as we have primarily relied on Measure B funds in the past to fund these needs. We also have an increase in the amount of office supplies needed to run these addition classes. We have been increasing the instrumentation we use in our classes this also increased the cost of these supplies. The increase in instrumentation also increases the cost of maintenance and replacement costs. With the increased number of instrumentation, we would need both human and financial resources to maintain and repair them when they break down.

2. Rationale for financial request(s).

Click here to enter text.

#### D. Technology (software only – discuss hardware in section E)

1. Request: Upgrade existing software or purchase new software.

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2. Rationale for technology request(s).

The use of the computer interfaces in the chemistry lab help the students see what is actually happening and increases the safety in the lab.

#### E. Facilities, Equipment (include technology hardware), and Supplies

1. Request: Renovation or upgrade of existing facilities or new facilities.

We need to have the inside of the old science building painted. This was approved in small projects, but not completed.

We have seen improvements in the level of noise in lab 1807 but more needs to be done. The noise level needs to be reduced furthermore so that students in the last 2 or 3 rows can hear and communicate with the instructor. During a laboratory, an instructor needs to be able to hear what is going on even from the farthest point of the lab for safety.

2. Rationale for facilities request(s).

The building has not been painted in in 8 years now and shows its age. The use of the computer interfaces in the chemistry lab help the students see what is actually happening and increases the safety in the lab.

3. Request: Upgrading of existing equipment or purchase of new equipment.

We need to replace our old polarimeter with two new and updated models. We should also replace one of our drying ovens.

4. Rationale for equipment request(s).

The old polarimeter does not work very well and makes it impossible to teach the students about chirality in organic chemistry. The drying ovens are also old and newer models may pay for themselves in reduced energy costs to run them.

5. Request: New supplies

New microscale kits or some microscale glass ware for the general chemistry classes.

6. Rationale for supplies request(s).

The additional microscale glass ware would help make the labs safer use less chemical and create less chemical waste.