

PROGRAM REVIEW UPDATE 2015-2016

Program: Geology

Division: STEMPS

Date: Oct 5, 2015

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Audience: Deans, Vice Presidents of Student Services and Academic Services, All Planning and Allocation Committees. This document will be available to the public.

Purpose: To document significant program accomplishments, plans and needs between Triennial Program Reviews. This update should provide a snapshot of your program.

Time Frame: This update should reflect on program status during the 2014-15 academic year. It should describe plans starting now and continuing through 2016-17.

Topics: The first section of this Program Review Update focuses on general program reflection and planning. The second and third sections focus on reflection and planning regarding Student Learning Outcomes.

Scope: While this Program Review Update does ask for some analysis of data, detailed data reports in the form of appendices should be reserved for the Triennial Program Review.

Instructions:

- 1) Please fill in the following information as completely as possible.
 - 2) If the requested information does not apply to your program, please write "No Changes Since the Program Planning Update."
 - 3) Send an electronic copy of this form to the Program Review Committee Chair and your Dean by _____.
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Part One: Program Snapshot

A. Have there been any significant changes to your program, your program's data or your program's needs since the previous Program Planning Update?

If there are any changes, describe the relevant information and its significance in the space below.

These changes might have originated from within the program or because of an external source (the institution or the state, for example). Possible sources of relevant information might include, but are not limited to, the following:

- Data generated by your program
- Data from the Office of Institutional Research
- CEMC Data
- Retirements
- State Mandates
- Labor Market Data

Looking over Rajinder's latest Geology Data Summaries:

- little has changed significantly since the last Program Review data
- of note
 - For Fall 2011-Spring 2015, the Geology Program Productivity (WSCH/FTEF) was consistently above 600, with a high of 689
 - Semester by semester program average fill rates ranged between 95-119%

<http://www.laspositascollege.edu/researchandplanning/documents/DisciplinePRReportSp11->

[15_GEOL.pdf](#)

http://www.laspositascollege.edu/researchandplanning/documents/DisciplinePRReportSp11-15_GEOL.pdf

B. What objectives, initiatives, or plans from the 2014 Program Planning Update (PPU) have been achieved and how?

Objectives in the previous Program Review PPU: Changing pedagogy/curriculum: Within the Geology program instructors are approaching the quantitative and/or mathematical content by having the students utilize graphs instead of calculator crunching, and large-scale (global) perspectives to topics such as Latitude and Longitude (instead of local, small scale). To cope with student aversion to long periods of focus on scientific topics, we are currently revising the laboratory pedagogical approach so that students are continually walking around the room to move from exercise to exercise, instead of working their entire set of exercises sitting at one table. Emphasis is also being moved to group collaboration and student mentoring during lab activities, instead of each student working individually for long periods of time while sitting.

Results/Achievements: Lab-time was reconfigured towards more experiential exploration and learning 'adventures'. The result was much more active student learning. An unanticipated consequence was a much more 'chaotic' environment – which is the result of multiple students learning, moving, talking, exploring, collaborating all at different rates and with different learning styles and preferences. Required course content available for geology majors at the same time that the learning environment was more inviting and enticing for non-science majors. We are still working on improving classroom/labroom flow-environment so that the chaos of experiential learning is managed; so that students can still move productively through the lab activity content.

One method that was utilized this past year, to cope with the experiential classroom environment and different student speeds and learning styles, was to allow students to work quietly in the library for the portions of the lab that could be done in that manner (many geology labs at the universities allow geology students to choose to do this).

In terms of creating more graphical (instead of computational) approaches, some activities have successfully implemented graphical approaches (e.g., radiometric dating and bar scales), while we are still continuing to work on other areas (e.g., vertical exaggeration).

C. What obstacles has your program faced in achieving objectives, initiatives, or plans?

The single major obstacle is student attitudes that they bring to the class before they've even given the content or format a chance. Most non-science majors are inexperienced with trial-and-error experiential learning and they are fearful of science. In addition, the labs are only 1 unit, so students have an expectation that the course is a fluff course that they don't have to show up on time for, nor stay the entire lab period (3-hours), or attend all of the scheduled weekly lab meetings. The cumulative result of their unwillingness to spend time on trial-and-error learning, coupled with their low expectations of what they should have to do for one unit, results in strong student resistance to concerted effort and time on their part.

D. What are your most important plans (either new or continuing) for next year?

1) Obtain secure funding for Historical Geology 3 and 3 Lab courses; so that the courses can be offered at least once every other year regardless of the number of students that enroll. The Geo 3 courses are required for the AD-T Geology major, meeting the state identified priority of focusing community colleges on the provision of required courses for transfer.

2) Acquisition of secure, appropriate storage and display for the Mammoth femur that was excavated on the Las Positas Campus in 2009. This local Tri-Valley fossil was excavated with care and now waits for us, in storage at the UC Berkeley Paleontology Department.

3) Continuation of experiential learning activities and environments, including teaching students to tolerate the frustration of trial-and-error learning.

4) To continue working on classroom management of the naturally generated energy of different students working at different paces collaboratively.

5) Acquisition of 20 portable electronic devices (laptops, tablets, etc) for Geology & Oceanography student labs. These will be used for the acquisition of student geoscience lab data during lab sessions.

6) Four new rigid classroom microphones/headsets for the Geoscience instructors.

7) Acquisition of lab supplies such as lab quality sample trays/bins, samples, specimens, materials (maps, beakers, pH materials, supplies, etc.), equipment, etc.

E. Do plans listed under question (D) connect to this year's planning priorities (listed below)? If so, explain how they connect.

Planning Priorities for 2015-16

- *Establish regular and ongoing processes to implement best practices to meet ACCJC standards*
- *Provide necessary institutional support for curriculum development and maintenance*
- *Develop processes to facilitate ongoing meaningful assessment of SLOs and integrate assessment of SLOs into college processes*
- *Expand tutoring services to meet demand and support student success in Basic Skills, CTE and Transfer courses.*

Both of the planning objectives in Part D, connect to the first planning priority listed above; in that both of these objectives are aimed at creating best practices that create the optimal appropriate learning environment.

F. Instructional programs: Did your program meet its program-set standard for successful course completion? yes no

(This data can be found here: <http://goo.gl/y9ZBmt>)

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

G. How have students been impacted by the work of your program since the last Program Planning Update (PPU)?

Students are experiencing a more appropriate experiential, engaging learning environment that offers the required course content, while being more approachable for the non-science majors.

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Part Two: SLO/SAO Assessment Review

Review your program's SLO assessment results for AY 2014-2015 and respond to the following questions.

- A. Discuss how assessment results in at least one course in the program indicate success in student learning (OR) Discuss how assessment results of at least one SAO in the program indicate success in service to students.**

Geology lecture SLO assessment results consistently show a 90% success rate (A, B or C levels of achievement). Geology lab SLO assessment results range from very high success rates (most students in the A, B or C ranges) to lower success rates where only 30-40% of the class demonstrates high success rates. This is a result of students (as discussed previously in this report) not attending class regularly or for the entire class period (because they don't feel a 1- unit course should need full attention or attendance). Additionally, as discussed previously, the labs focus on more quantitative and/or computational exercises than the lectures do, and non-science majors are predisposed to strong resistance in these areas.

- B. Discuss assessment results that indicate a need for improvement.**

As discussed above and previously in this report, the areas of continued challenge are the labs, particularly those with quantitative computations or exercises, and the labs where experiential learning by trial-and-error necessitate student willingness to persevere through failure, frustration and time investment.

- C. Instructional Programs: For the course(s) listed in (B) above, discuss how your program, or someone in your program, made changes or plans to make changes in pedagogy as a result of SLO assessment results.**

Non-Instructional Programs: For the areas(s) listed in (B) above, discuss how your program made changes or plans to make changes as a result of SAO assessment results.

As discussed previously, instructors are continuing to develop lab environments and activities that incite and engender student engagement through collaborative experiential learning.

- D. Instructional Programs Only: Give an example of a change in the number of units and/or lab hours based on assessment data, if applicable.**

N/A

- E. Instructional Programs: Discuss how distance education course assessment results compare to face-to-face courses, if applicable. (*Respond to this question if your program has distance education courses.*)**

Non-Instructional Programs: Discuss how SAO assessment results for online services compare to face-to-face services, if applicable. (*Respond to this question if your program provides services online.*)

In general, the distance education SLO results are slightly lower than the on-campus SLO success rate. The difference is not significant, and can easily be correlated to DE student participation.

F. Did your program discover the need for additional resources (for AY 15-16 or 2016-17) based on the assessment results? YES NO

If yes, please explain.

Yes, we need more lab materials in order to continue develop and expand the hands-on experiential environment.

Part Three: SLO/SAO Continuous Improvement Process

A. SLO Planning through AY 2016-17

As appropriate for your program, please address each of the following areas. For each area, describe your program's plans starting now and continuing through the academic year 2016-17. Focus on how the program's SLO process will impact student learning or the student experience at Las Positas College.

1. SLO/SAO assessments: How does your program plan to use assessment results for the continuous improvement of student learning or services? (*NOTE: 100% of courses in your disciplines should be assessed a minimum of once every two years. Each program must assess at least 25% of its courses every semester. Programs with SAOs should assess at least 50% of their SAOs every year.*)

Examples might include (Your responses may vary.):

- changing number of units/lab hours
- changing pedagogy/curriculum
- changing assessments
- changing service hours
- changing modes of service delivery

Obtaining new lab materials, developing lab environments and activities, and introducing some of this type of learning experience (in smaller, shorter activities) in the lectures sections.

2. Have your assessment results shown a need for new/revised SLO/SAOs? YES NO

If yes, complete the table below:

Estimated number of courses for which SLOs will be written or revised:	
Estimated number of SAOs that will be written or revised:	

- a. What courses or SAOs will your program assess during this academic year (2015-16)?

Geology 1, 3, 5, 7, 12

- b. Instructional programs only: 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 who are likely to participate in the SLO process in 2015-16.

Number of Part-Time faculty who will participate in the SLO process (creating, assessing or discussing SLOs)	
Fall 2015	0 – unless they change their minds
Spring 2016	0 – unless they change their minds