PROGRAM REVIEW Fall 2022

Program: Geology

Division: Science, Technology, Engineering and Mathematics

Date: 11-3-2022

Writer(s): Oliver Christen

SLO/SAO Point-Person: Oliver Christen

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

Uses: This Program Review will be used to inform the campus and community about your program. It will also be used in creating Division Summaries, determining College Planning Priorities, and allocating resources. The final use is to document fulfillment of accreditation requirements.

Please note: Program Review is NOT in itself a vehicle for making requests. All requests should be made through appropriate processes (e.g., Instructional Equipment Request Process) or directed to your Dean or supervisor.

Time Frame: This Program Review should reflect on program status during the 2022-23 academic year. It should describe plans starting now and continuing through 2023-24.

Sections: There are two sections to this document. Sections and questions identify the name of the committee or office that will use the information and where you can get additional help.

- The first section focuses on general program reflection and planning.
- The second section focuses on data analysis, including SLOs/SAOs/PSLOs
- The final section is a review of your pathway maps and curriculum, to be filled out only by programs with curriculum offerings.

Topics: The Program Review Glossary defines key terms. Writers should review this glossary before writing: https://bit.ly/2LqPxOW

For Help: Contact Nadiyah Taylor: ntaylor@laspositascollege.edu.

A list of contacts for help with specific sections is provided on the Program Review website under the “tools for writers” tab. [https://bit.ly/3fY7Ead]

Instructions:

1) Please respond to each question with enough detail to present your information, but it doesn't have to be very long.
2) If the requested information does not apply to your program, write "Not Applicable."
3) Optional/suggested: Communicate with your dean while completing this document.
4) Send an electronic copy of this form to Nadiyah Taylor and your dean **by November 1, 2022**

Helpful Links:

Program Review Home Page

Fall 2021 Program Reviews

Frequently Asked Questions

Throughout this document you'll see that equity is a guiding principle.
Here is the LPC definition:

Las Positas College will achieve equity by changing the impacts of structural racism, ableism, homophobia, and systematic poverty on student success and access to higher education, achieved through continuous evaluation and improvement of all services. We believe in a high-quality education focused on learning and an inclusive, culturally-relevant environment that meets the diverse needs of all our students.

LPC Equity Definition: Equity is parity in student educational outcomes. It places student success and belonging for students of color and disproportionately impacted students at the center of focus.

Section One: Your Program In 21-22 – Please check N/A where relevant

A. Accomplishments: Identify accomplishments from the 21-22 AY.

Some areas you may want to note in your explanation are:

- Did your accomplishments support your program's plans identified in 21-22 PR
- Did they relate to guided pathways, and/or
- Did they support areas in the equity definition above

_____N/A

Accomplishments
1 Hired a new laboratory technician for Fall 2022.
2 Will offer new course (Geology 20 "Earth Science for Educators") for the first time in Spring 2023.
3 Resumed teaching Geology 12 & 12L on-campus (while continuing to teach it on-line), which allows students to choose their preferred modality
4 Some departmental office hours are held in-person and some are via Zoom – the mix of modalities helps reach out to more students.
5 Hired two new part time geology instructors.
6

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B. Challenges, Pain Points, and Needs:

What significant challenges or obstacles did your Program face during AY 21-22 especially related to accomplishing program goals/plans? You may want to consider areas in the equity definition on page 2.

_____N/A

Challenges/Pain Points/Needs
1. Lower than normal enrollments students in our face to face classes and some online.

2. Transitioning from a part-time to a full time coordinator position.
3. We do not have a department head at the present time.
4.
5.
6.

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C. Reflecting on your program's experiences from 2020 - to 2022, what innovations or new processes did you integrate that you would like to continue?

_____N/A

- **Using Cappasity as an online tool for visualizing three dimensional photographs of rocks and minerals.**
- **Evolved the Augmented Reality Sand Box in the laboratory for conducting instructor demonstrations on topography of features.**
- **Created online references (including still photos, manipulatable videos, written descriptions, and canned videos) for many of the minerals, rocks, fossils, and other resources in the teaching section.**
- **Implementing virtual field trips for online courses (e.g. visiting the Grand Canyon).**
- **Integrating online real-time assessments with Learning Catalytics during synchronous zoom classes, giving instant instructor feedback on student understanding. This enables the instructor to focus class time on key concepts that students need additional instruction and improves overall student understanding of geological topics.**

D. Explain one way that your program is connected to the College Mission and/or Educational Master Plan. Identify the specific elements.

- *College Mission*
- *Educational Master Plan (see pages 72-76)*

_____N/A

- **Support of life-long learning: Instructors tie in course topics to local and regional features as well current events.**
- **Instructors empower students to view their outside environment through a geology/oceanography lens. Students excitedly report being able to, for example, identify rocks when out for walks.**

Goal A3 of the master plan:

- **Increased participation in the Persistence Project to improve student retention, outreach, and academic success in geology classes.**

Master Plan Goal A:

- **Offering courses in diverse modalities, as well as multiple modes of instruction and media within a course for students with differing needs.**

E. Planning: What are the most important plans, either new or continuing, for your Program?

_____N/A

Plan	New	Continuing	Short term	Long term
Strategies for recruiting more students.	**X**	**X**	**X**	**X**
Determine which mix of modalities (in-person, hyflex, on-line synchronous, online asynchronous) we can offer our courses to enable quality instruction as well as increase enrollment and meet the various needs of students.		**X**	**X**	**X**
Hire a new department head.	**X**		**X**	
Increase the visibility of our department with an eye to recruiting more students. Both on-campus and at the high school and community level.		**X**		**X**
Focus on self-care and staff well-being to promote flexibility and health in the Geology team so that we remain as agile, and able to adapt, as possible. Zoom meetings to share ideas and give each other support will remain crucial.		**X**		**X**
Maintaining a positive outlook even in the face of so much complexity and uncertainty. Listening well		**X**		**X**

to each other and problem solving together rather than focusing on the negative.				
Awareness of need for mental health support for all who are struggling; being sure students are aware of LPC resources.		**X**		**X**

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F. If you have outreached to students in your department, program, or classes, please share information about what you discovered and how you have used the feedback.

_____N/A

Describe student outreach used to gather feedback. For example, through surveys, conversations, etc.	**1.Conversations with students, anonymous surveys and survey participation for credit.** **2.E-mail students whose attendance and/or performance has dropped off.**
What did you learn?	**1.What is going well or poorly, including instructor approach, student-instructor interaction time, clarity of assignments, amount of coursework, use of feedback: modify courses to best suit the current students.** **2. how to support their academic success despite life difficulties.**
How will you use the feedback?	**1.modify courses to best suit the current students.** **2.provide the requested support.**

G. Are there institutional barriers to the equity work that your program would like to engage in, and what suggestions do you have for minimizing or eliminating these barriers? (See page 2, for the equity definition)

_____N/A

Barrier	Suggestions

Hyflex training is required to offer classes via Hyflex modality but the training is offered infrequently.	**Offer Hyflex training classes more often.**

Section Two: Data Analysis – Quantitative and Qualitative

A. IR Data Review: Discuss any significant trends in the data provided by the Office of Institutional Research and Planning (or any other data you use for decision-making and planning).

(Note: Not all Programs have IR data available; if your program does not have a data packet or dashboard data, you may note that in the response box.)

- IR Data packets are available here (posted Fall 22): https://bit.ly/2IYaFu7
- Course Set Standard Overview & Success Rates Dashboard can be found in the middle of this page: https://bit.ly/2Y9vGpl

The Geology Program total course enrollments and success rates for the past six years were as follows:
2016 – 2017 (1057 enrolled students, 85% overall success rate)
2017 – 2018 (986 enrolled students, 84% overall success rate)
2018 – 2019 (994 enrolled students, 84% overall success rate)
2019 – 2020 (979 enrolled students, 84% overall success rate)
2020 – 2021 (963 enrolled students, 87% overall success rate)
2021 – 2022 (679 enrolled students, 89% overall success rate)
The data clearly shows our Geology enrollments have dropped from 1057 students during the 2016 – 2017 academic year to 679 students during the 2021 – 2022 academic year.
Campus data also shows students dropping with 2016 – 2017 academic year at 54,923 and 2021 – 2022 academic year at 42,480.

For overall Geology program demographics:
In Fall 2017, males comprised 50% of the student population, and 48% in Fall 2021.
In Fall 2017, females comprised a student population of 50% and 52% in Fall 2021.
This data shows a slight increase of females vs. males in the Geology Department over the last six years.

The age groups for Fall 2021 include:
47% for ages 19 and under
22% for ages 20-21
15% for ages 22-24
7% for ages 25-29
5% for ages 30-39
2% for ages 40-49
2% for ages 50 and over

One observed trend is the age group of 19 and under increased from 40% during Fall 2017 to 47% in Fall 2021. All other age groups remained relatively the same during the same time frame.

In the Race-Ethnicity demographics for the Geology Program, there was an increase in the % of Latino students, from 28% to 36% (F17 to F21) and a decrease in the % of those identifying as White students from 43% to 34% (F17 to F21). College-wide demographics were around 31% Latino (F17 to F21) and then saw a drop of 37% to 31% White (F17 to F21) and an increase of 15% to 19% Asian (F17 to F21).

Student Enrollment status was relatively similar to that of previous years, with Fall semesters between 74-71% Returning students and then Spring semesters at 88-89% Returning students.

The Geology program has a significantly lower percentage of students who only take Face-To-Face courses: 38% in Fall 2017 to 0% in Fall 2021. Face to Face courses along with Distance Education (DE) courses range from 46% in Fall 2017 to 18% in Fall 2021. Finally DE classes ranged from 16% in Fall 2017 to 82% in Fall 2021. The data for Spring 2018 & Spring 2022 shows a similar drop with Face to Face class offerings vs. DE classes. This drastic change in face to face reduction was due to Covid 19 beginning in Spring 2020 and continuing through Fall 2021.

This is appropriate as there has been a statewide drive to continue online education, with a particular focus on GE courses - which are all of the LPC Geology courses. The state's purpose was to continue creating more access to these online courses for all community college students. This was particularly true during the Covid 19 pandemic. If Las Positas College does not offer a large portion of our courses online – we will lose those students to the other colleges in the Bay Area and/or in California who are offering the same courses online. We need to be able to offer courses through the online delivery platform in order to maintain adequate enrollments.

Prior to Covid 19, Geology students in Face-to-Face classes tended to demonstrate higher success rates at 38% vs DE classes at 16% in Fall 2017. Those numbers were relatively similar for Spring 2018.

The overall educational goal of most Geology students is Transfer (77-84%).

Geology productivities (WCSH/FTEF) ranged between 405 (Spring 2022) to 582 (Fall 2017). The productivities have slipped for both Fall and Spring semesters. In Fall 2017 the productivity was 582 and 478 in Fall 2021, while the productivity in Spring 2018 was 515 and 405 in Spring 2022.

B. Program-Set Standard (Instructional Programs Only):

The program-set standard is a baseline that alerts programs if their student success rates have dipped suddenly. There are valid reasons a program does not meet the Program Set Standard; when a program does not meet this standard, they are simply asked to examine possible reasons and note any actions that should be taken, if appropriate.

Program-set standard data can be found on this page

- Did your program meet its program-set standard for successful course completion?

  _**X**___Yes _____No

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

Not Applicable

C. SLOs/SAOs: Assessment of Student Learning and Support

Program Review is our major source of data on student learning for the college and is therefore regularly reviewed. *Each year programs must discuss how their PSLOs, CSLOs, or Service Area Outcomes (SAOs) support the College Mission. This helps us to see how our students are progressing in their learning.*

For assistance with these questions and instructions on how to run the necessary reports in eLumen, click here.

You should complete at least one of the following three sections. Please choose the option(s) below that are appropriate for your program - Go directly to the section(s) you chose.

- C1: Instructional Programs with PSLOs (disaggregated PSLOs)
- C2: Instructional Programs with CSLOs *(Departments without degrees, non-major courses, and/or other courses up for assessment)*
- C3: Non-Instructional Programs (SAOs)

C1: Instructional Programs with PSLOs (disaggregated PSLOs)

1) To assess PSLOs, CSLOs must be correctly mapped to only one PSLO within eLumen and every mapped CSLO must have assessment data. Please insert a checkmark in one of the following options that correctly describes your data and move on accordingly.
    a. If the CSLOs are mapped correctly and there is data for each CSLO, then continue to question 2.
    b. If the CSLOs have assessment data and the mapping needs to be completed, then complete the mapping within eLumen (See SLO Handbook, p. 7) and continue to question 2.
    c. If not all of the mapped CSLOs have assessment data, then you cannot assess the PSLO. In this case, continue to question C2.

2. Based on your current 3-year plan, list the PSLO(s) for the academic year 2021-2022 that your program selected to review and explain why these were chosen.

The Certificate of Achievement in Geology is awarded upon completion. Students are able to demonstrate proficiency in the evaluation and identification of basic Earth materials (e.g., rocks and minerals). Earth processes, such as Plate Tectonics are also part of the PSLO assessment. Demonstrating an ability to define, evaluate and identify rocks and minerals and their properties are core concepts and skills which are expected for the Geology AS-T Degree-Granting Program.

2) What percentage of faculty completed the planned assessments for the selected PSLO? (run Faculty Participation report from last year). _____%

3) Non-disaggregated Analysis of PSLO(s): In general, what conclusions can be drawn about student learning in your program?

4) Disaggregated Analysis of PSLO(s) to identify potential inequity: Disaggregation allows you to examine inequities in student learning outcomes within sub-populations in your program. See the Guide for instructions on how to disaggregate PSLO data.

Which variables did you use to disaggregate the data? Mark all the apply.

- Gender
- Age
- Ethnicity
- EOPS
- Veteran
- BOG Recipient
- First Generation
- DE
- Online
- Hybrid
- Fact-to-Face

5) Did your data reveal any patterns of inequity? If so, please explain those patterns.

6) Identify any challenges facing your department that may contribute to inequitable outcomes as revealed by your disaggregated PSLO data. (Refer to section 1B if needed)

7) **Prior to Covid-19, our Geology courses (even the labs) utilized the campus online software. This requires students the access to computers for completion and submitting their course work. The campus Information Technology (IT) department has offered superb support in allowing our Geology laboratory room to offer a small set of laptops for student usage. Unfortunately there are not enough laptops for every student, however most of them use their own computers. Still, a small set of laptops has been beneficial to provide technology to those students who do not posses their own laptop computer. Prior to Covid-19, most Geology students had accessibility to computers at home or at the Las Positas Computer Center. During the two years of the pandemic, our Geology faculty have directed students to use the campus laptop and/or utilize the Wifi hotspot loaner program. Our staff is very thankful to the IT department.**

8) <u>Based on discussion with others in your program</u>, explain potential changes that will improve student learning and address inequities identified through analysis of disaggregated PSLO data.

As of Spring 2021, our Geology Department is mostly composed of Latino and White students. In order to diversify more of our student population from other ethnicities (African American, Asian, etc.), our department plans on recruiting from the High Schools in the Tri-Valley region via seminars and other outreach programs. With the addition of our newly developed Geology 20 course through the ECE department, we are hopeful this will gather more student interest in becoming K-12 teachers thus diversifying the Geology Department.

9) The 2022-2023 Academic year is the last year in our 3-year assessment cycle. Please review your 3-year plan and verify that all of your courses will be assessed by June 2023.

Will all of your courses be assessed by June 2023?

___**X**_Yes _____No

If not, please update your 3-year plan to include any courses you missed or if you plan to revise your 3-year plan, then send your updated plan to the Curriculum and SLO Specialist, and the SLO Chair.

10) Are you planning on updating any CSLOs or PSLOs?

_____**X**__YES _____NO

(If yes, then you may do this through eLumen, see the SLO Handbook if you need instructions on how to do this.)

11) If you experienced any challenges in completing your PSLO assessment process please list those in the box below along with any items that would help you improve this process in the future.

C2: Instructional Programs With CSLOs - Departments without degrees, non-major courses, and/or other courses up for assessment

1. Based on your current 3-year plan, list the CSLO(s) for the academic year 2021-2022 that your program selected to review and explain why these were chosen.

2. What percentage of faculty completed the planned assessments for the selected CSLO? (run Faculty Participation report from last year). _____%

3. Using the CSLO data and reflection questions, what are some conclusions?

4. List changes that you plan on making to improve student learning.

5. The 2022-2023 Academic year is the last year in our 3-year assessment cycle. Please review your 3-year plan and verify that all of your courses will be assessed by June 2023.

   Will all of your courses be assessed by June 2023?

   ____Yes _____No

   If not, please update your 3-year plan to include any courses you missed or if you plan to revise your 3-year plan, then send your updated plan to the Curriculum and SLO Specialist, and the SLO Chair.

6. Are you planning on updating any CSLOs?

   _____YES _____NO

   (If yes, then you may do this through eLumen, see the SLO Handbook if you need instructions on how to do this.)

7. If you experienced any challenges in completing your CSLO assessment process please list those in the box below along with any items that would help you improve this process in the future.

C3: Non-Instructional Programs (SAOs)

1. Based on your current 3-year plan, list the SAO(s) for the academic year 2021-2022 that your program selected to review and explain why these were chosen.

2. What percentage of staff completed the planned assessments for the selected SAO(s)? (run Faculty Participation report from last year). _____%

3. Based on discussion with others in your area: Using the SAO data and reflection questions or other sources of data, what conclusions can be made?

* If you used other sources of data, briefly explain below.

4. List changes that you plan to improve outcomes in your service area.

5. The 2022-2023 Academic year is the last year in our 3-year assessment cycle. Please review your 3-year plan and verify that all of your courses will be assessed by June 2023.

Will all of your courses be assessed by June 2023?

____Yes _____No

If not, please update your 3-year plan to include any courses you missed, or if you plan to revise your 3-year plan, then send your updated plan to the Curriculum and SLO Specialist, and the SLO Chair.

6. Are you planning on updating any SAOs?

_____YES _____NO

(If yes, then you may do this through eLumen, see the SLO Handbook if you need instructions on how to do this.)

7. If you experienced any challenges in completing your SAO assessment process please list those below, along with any items that would help you improve this process in the future.

Note: There is an opportunity to give feedback on the PR template on the last page if you won’t be completing the next sections

Section Three: Guided Pathways & Curriculum Review

(Programs with Courses Only)

For assistance with these questions, contact the Curriculum Committee Chair

Part One: Guided Pathways: Your program's work with guided pathways

A. Program Maps - The Program Maps (degree and certificate course sequences) are found in Academic & Career Pathways

Up-to-date Program Maps are used by students in your pathway, for data collection to support in-reach to students in your Pathway, predictive scheduling recommendations for Discipline Plans, and may influence the allocation of FTEF.

Please compare each Program Map to your current course offerings and course sequencing. Pay close attention to prerequisite information and to classes that may only be offered particular terms.

1) Are your Program Maps accurate?

- Yes, all of my maps are accurate

- No. The Program Map for _____*(degree/certificate name)*_____ Requires an update
  - Requires a **non-curricular change** (ie: course sequencing) Please consult your **Pathway counseling faculty liaison**
  - **Curricular Change** (Program modifications) - Modifications are initiated through the Curriculum Committee. For mapping support contact the Curriculum & SLO Specialist.

Part Two: Curriculum Review

For assistance with this section, contact the Curriculum Committee Chair.

The following questions ask you to review your program's curriculum. To see the last outline revision date and revision due date follow the directions below:

1. Log in to CurricUNET
2. Select "Course Outline Report" under "Reports/Interfaces"
3. Select the report as an Excel file or as HTML

A. *Title V Updates [Curriculum Committee]: Do you need to update any courses to stay within the 5-year cycle? List courses requiring updates below.*

Reminder: updates to course title or units, and course deactivations, will require updating any program they are associated with. List programs requiring updating in question (C).

_____**X**__YES _____No

Course Name & Number
Physical Geology 1 and Physical Geology 1 Laboratory and Historical Geology 2
Oceanography Geology 12 and Oceanography Geology 12 Laboratory
Environmental Geology 5: Hazards and Environmental Geology 7: Pollution & Resources
Geology 20: Earth Science for Educators

B. *Degree/Certificate Updates [Curriculum Committee]: Do any programs require modification in this cycle? If yes, list them below.*

Reminder: Program modifications sent to the Curriculum Committee for approval require an updated Program Map. For mapping and curriculum support please contact the Curriculum & SLO Specialist.

_____YES _____**X**____No

Certificate or Degree

C. *Are there any courses or programs for which a non-mandatory update is planned?*

Reminder: Program modifications sent to the Curriculum Committee for approval require an updated Program Map. For mapping and curriculum support please contact the Curriculum & SLO Specialist.

_____YES _____**X**_____Not at this time

If yes, explain details, rationale, or any support that might be helpful to the committee.

D. Does your program plan to create any new courses or programs this year?

Reminder:: New program proposals require a Program Map for Senate approval. Please ***contact the Curriculum & SLO Specialist if you are planning a new program.***

_____**X**__YES _____No

If yes, please provide details and the rationale

Geology 20 – Earth Science for Educators to be taught in Spring 2023 **The purpose of this course is to train students in Earth Science (Geology, Oceanography, Meteorology and Astronomy) and apply their knowledge to teach K-12. Students taking this class are part of the Early Care and Education (ECE department) at Las Positas College headed by Professor Nadiyah Taylor.**

E. Are there any courses that you plan to deactivate or sunset?

_____YES _____**X**___No

Course Name & Number

Program Review Suggestions (optional): What questions or suggestions do you have regarding this year's Program Review forms or process?

Not Applicable