PROGRAM REVIEW Fall 2022

Program: Engineering (includes Engineering Technology program)

Division: Science, Technology, Engineering and Mathematics

Date: October 20, 2022

Writer(s): Jennifer Decker

SLO/SAO Point-Person: Jennifer Decker

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 new full time engineering faculty member and discipline coordinator
2 - Reorganized the Physics and Engineering common lab spaces
3 - Added two more part-time faculty members to teach Fall 2022
4 - Worked to bring all classes back face to face by Spring 2022
5 - One faculty member was trained in the Hyflex mode of instruction
6 - Hosted Vacuum Technology Workshop during Summer 2022

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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. Low enrollment has been challenging in that it has reduced the overall FTEF of our already small Engineering Department.
2. As a single person department with only 1.0 CAH of reassignment time for department coordination, it is challenging to do many of the administrative, curricular, outreach to local industry partners & high schools, and other tasks necessary to maintain the overall health AND growth of both the Engineering and Engineering Technology programs (and the 14 degrees and certificates within them).
3. Balancing the reduced FTEF of 3.30 and the 1.0 reassign coordination time between both the Engineering and Engineering Technology programs is challenging. For example,

ENGR 50 (an Engineering Technology class) is worth 6.50 CAH, which over the last 2 years has resulted in 2 less Engineering Transfer courses being offered. The Engineering Technology program also has an active advisory board which often proposes new curriculum based on industry needs (i.e. Vacuum Tech, Laser Tech, Additive Manufacturing) for the full time faculty member to explore with the support of the industry partners. Equal time should be allocated to working with UC/CSU (especially those locally) to create easier pathways and explore other foundational courses to add to our programs for students who are pursuing Engineering Transfer. This is challenging to accomplish in addition to teaching 3-4 very different engineering courses & participating in division & college-wide activities.
4. Finding and hiring qualified instructors to add to our Engineering Part Time pool.
5. It would be helpful to have the contact information for all students who are declared as Engineering and Engineering Technology majors at LPC. Currently, instructors only know students who are in their courses. This would allow for targeted information such as availability of classes, internships, extra curricular activities, and even just keeping in touch with students who may not be taking engineering courses as they are working toward completing prerequisites in Math and Physics. The hope is this increased contact improves student success and retention.
6. It would be helpful to have a formal way of tracking the number of students who successfully transfer to a 4-year university from our Engineering program. This data is currently informally tracked by the department coordinator. This data should also be used as a metric to evaluate the success of a program.

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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

- Maintain both online and in person office hours in order for students to access help in whatever mode is easiest for them.
- Create the availability of a Zoom link for students who are unable to attend class due to illness or other extraordinary circumstances.
- Creating Google Form surveys (as opposed to paper forms) to collect information about our students needs, experiences and future plans.

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

Goal B: Community Collaboration ~ The Engineering Program regularly collaborates with local industry partners, including Lawrence Livermore National Lab, Curtiss-Wright, LAM Research, and others on our Engineering Technology Advisory Board. These partners let us know emerging trends related to their hiring needs and any skills that they feel students need in order to be successful in the workforce. It is due to the recommendations from this group that a Vacuum Technology Workshop was hosted at LPC during the Summer 2022.

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

_____N/A

Plan	New	Continuing	Short term	Long term
Increase lagging enrollment numbers, such that we can return to offering multiple sections of a course per academic year (increase of FTEF for ENGR transfer courses)		X		X
Create summer experiences for prospective, incoming or current students to allow them to explore the field of Engineering and Engineering Technology and get to know LPC.	X			X
CSUEB has a new Civil Engineering program starting in Fall 2023 - collaborate on possibly creating a specific transfer pathway for students (similar to Biology)	X			X
Hire more qualified faculty for the Engineering part-time instructor pool	X		X	
Create 3 year SLO assessment plan	X		X	
Map CSLOs to PSLOs in eLumen	X		X	
Work with PT Faculty to create SLO assessments	X		X	
Revitalize the Engineering Club	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.	Google Forms - beginning & end of semester Weekly Exit Tickets
What did you learn?	**Beginning of Semester**: Student interests, courses being taken, academic goals **End of Semester**: Future plans related to transfer or continuing at LPC, feedback about the engineering program at LPC **Exit Tickets**: Students reflect on what they learned the previous week, questions they have on the content covered and on what worked well last week/how the instructor can support them in the coming week.
How will you use the feedback?	**Surveys**: Inform which classes students may take the following semester; Transfer success rates & which schools students are commonly transferring to **Exit Tickets**: Used weekly to inform instruction - concepts that need review, questions that need to be answered, pedagogical techniques that worked or need to be modified.

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)

___X____N/A

Barrier	Suggestions

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

- Student headcounts and enrollments were down again in the 2021-2022 academic year, with the Spring 2022 semester student headcount approximately 40% lower than the Fall. One possible reason for this, is that we have only offered one section of ENGR 1, our Introduction class, during the Spring semester for the past few years.
- There was an increase of students in the 19 or younger age group amounting to almost 50% of our students in the Fall of 2021. These numbers are similar to Fall 2019 and a bounceback from the reduction seen in the Fall of 2020.
- The male to female ratio has stayed consistent over the past few years and is on par with what is observed in industry.
- In Race and Ethnicity, the Latinx population is still the majority in the Engineering department, however, there was a reduction in this population from Fall 2020.
- The number of first time college students increased from 19% to 32%, which is the largest percentage in the last 5 years. In addition, 56% of our students identified as first year students. These numbers are encouraging, however considerations must be made for the fact that it may take these students some time to reenter engineering courses, as they complete their Math and Physics prerequisites.
- The number of full time students increased to 28% (in the Fall of 2021) from 15% the previous year.
- The educational goal for students in the Engineering department is primarily to transfer to a 4-year university. It would be helpful to determine a way to track the number of students who successfully transfer and to use this data as a metric of program success.

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.

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 Engineering Department did not have a 3-year plan created. A 3-year cycle will be implemented in Fall 2023.

2) What percentage of faculty completed the planned assessments for the selected PSLO? (run Faculty Participation report from last year). _____0_____%

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

No conclusions can be drawn since no data was added to eLumen for the 2021-2022 school year.

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.

There was no data to reveal any patterns of inequity.

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)

There was no data to reveal any challenges revealed by our disaggregated PSLO data.

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

There was no data to reveal any challenges revealed by our disaggregated PSLO data.

8) 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 __x__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.

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

_____YES ____x____NO

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

10) 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.

The PSLO/CSLO assessment process was challenging in that there was not a 3 year SLO assessment plan created for Engineering. In addition, no SLO assessment data has been entered by any faculty for the last year and our PSLOs have not been mapped to our CSLOs. As the new full time faculty member, I plan to complete the 3 year SLO assessment plan that will be starting in the Fall of 2023 and to map our PSLOs to our CSLOs. I also plan to communicate with my part time faculty about the SLO process to include them in their planning and data collection.

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?
   X - 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
Introduction to Circuit Analysis - ENGR 44 - Due 12/4/2022
Applied Statics and Materials - ENGR 37 - Due 3/19/2023
Materials of Engineering - ENGR 46 - Due 5/7/2023

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.***

_____YES _____x_____No

If yes, please provide details and the rationale

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?
