

Program: Mathematics

Division: STEM

Date: 10/31/2023

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With the approval of the Academic Senate and the Institutional Planning and Effectiveness Committee, we are moving to a bi-annual cycle of program review updates and full program reviews. **Fall 2023 is a Program Update cycle.**

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

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

Key Terms: The Program Review Glossary defines key terms that you can review before writing: <https://bit.ly/2LqPxOW>

HELPFUL LINKS:

- 1) [Program Review Committee Page for Writers](#)
- 2) [Fall 2022 Program Reviews](#)
- 3) [Frequently Asked Questions](#)

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

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) 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, 2023**

IMPORTANT CHANGES AND REMINDERS

Some sections have been removed for ease of completion. However, these important tasks will need to be reviewed by programs:

- ✓ **Check for Title V updates required for any of your courses or Programs:**
 1. To check on the status of courses and programs to see if any updates are required
 - a. Log in to CurricUNET
 - b. Select "Course Outline Report" under "Reports/Interfaces"
 - c. Select the report as an Excel file or as HTML)
 2. If updates are needed, submit these updates to the Curriculum Committee
 3. Then, 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 during certain semesters.
 - a. If your map requires a **non-Curricular** change (i.e., course sequencing) consult your [Pathway counseling faculty liaison](#) to initiate any changes.
 - b. If your map requires a **Curricular Change** (Program modifications) - these are initiated through the Curriculum Committee.
- ✓ **Review your programs to see if there are any modifications needed**
- ✓ **Review your programs and courses to see if any will be sunset or deactivate**

HAS YOUR PROGRAM HAD ANY SIGNIFICANT UPDATES SINCE THE LAST PROGRAM REVIEW?

- No, I'd like to skip the update this year, and I understand that I can only do this twice in three years.**

THERE ARE TWO SECTIONS:

1. Updates - *All programs* (page 3)
2. CTE Review – *CTE programs only* (pages 4-7)

ALL PROGRAMS: SECTION ONE

1. Please describe the most important updates, achievements, challenges, or barriers to your program in academic year 22-23.

- Update: To reduce equity gaps in successful completion of our first level transfer math courses and Calculus I, 2022-2023 was the first year that math support was required for the most at-risk band of students, based on prior completion of Algebra 2 and high school GPA.
 - Recommendations from the RP Group and State Chancellor's Office informed our Guided Self-Placement process which required students to self-report their past academic experiences.
 - RP Group recommendations then placed students into one of three groups - students with required math support, students with recommended support, or students informed support is available.
 - To increase flexibility, students who were required to have math support were able to satisfy this requirement via completing our week-long Math Jam or taking our semester-long concurrent support class for credit or non-credit.
- Achievements:
 - Faculty trained in teaching Puente cohorts. LPC first college in the state to offer Puente Mas with both STEM and SLAM.
 - Our successful Math Jam program has been slow to come back since the pandemic, but we were able to offer in-person Math Jam in the Fall 2022 for first-transfer level BSTEM and SLAM students and experienced robust enrollment in our Calculus I sequence.
 - OER materials for all of our first-transfer level courses, except Math 33 and Math 34, were created/adopted and piloted in the 2022-2023 year for a rollout in all sections starting Fall 2023.
 - Math 27 (Number Systems for Educators) was offered for the first time in Spring 2023 thanks to the Strong Workforce Grant and a substantial cohort of early childhood education students.
 - Hosted the AMATYC Competition (national mathematics exam that has the potential to award a \$3000 scholarship to the highest scoring participant) both semesters. Had about 50 students participate in Fall 2022, bringing participation closer to pre-covid levels, though struggled with participation in the spring.
 - Increased outreach with local high schools. Faculty attended numerous tabling sessions during the Spring semester to share LPC resources such as the Geometry class offered over the summer to accelerate the math pathway for high school students.
 - Summer 2023, had six full classes of high school students taking NMAT 256 (non-credit geometry). Students come from both inside and outside of our service area.

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- Emporium added Math 30, 39 and 47 to the course offerings since we transitioned away from offering basic skills/pretransfer level.
- Challenges/Barriers:
 - In the Spring 2023 only our Math Jam Calculus sequence had high enough student enrollments to be offered, the SLAM and BSTEM classes were canceled. Since Math Jam is an alternative way of satisfying a required support condition for taking their math class, it potentially drops students from their math class if the corequisite requirement is canceled.
 - Funding for Math Jam continues to be challenging and unstable. Funding for tutors and especially food is essential for running this program, as the cafeteria and mini-market is closed leaving no access to food (outside of vending machines) during this week.
 - Graphing Calculator free loaner program through the Library has been too successful. Inventory is too low to keep up with student demand for this technology. The Library has also had a hard time getting students to return the calculators after their sequence of Math classes has ended.
 - HyFlex technology in the classrooms leaves something to be desired. We would like to have a diverse set of classes using various course modalities, but while the idea of HyFlex is great, the faculty who are trained in that mode and have used it immediately request that they not be offered HyFlex classes, for the most part due to the technology in the classroom. However, the training also needs to be more robust with hands on technology training and perhaps role-play of students in the classroom both in-person and online.
 - The department's high school tutoring program, which began in Fall 2016, had its lowest enrollment last year, with zero students in the fall and only one student in the spring. The reason for this low level of interest is the onerous registration process and fees that have been reinstated to participate. We believe that waiving these fees, such as the Student Health Fee, would help increase enrollment in this service to the community.
 - Lack of interested personnel to help with needed updates and supports for under-prepared students in our first level transfer courses. Faculty are spread too thin and it constantly feels like an uphill battle to stay on top of all of the updates and changes that are required of our program let alone take the time to really polish and improve what we have.
 - APEX (Applied Programming Experiences), a grant with SJSU, works to incorporate computing in introductory Math and Bio courses. The Faculty Learning Community (FLC) is struggling to get new cohorts each year of faculty willing to participate in incorporating modules in their classes.
 - Concurrent Enrollment for High School students in Math 2 and higher is based on passed AP scores, which are not reported until mid-July, which means that students need to fill out a prerequisite challenge to take the course. However, we cannot accept an in-progress grade to satisfy a prerequisite challenge and their class grade is not reported until Mid-June, which is still too late to enroll in

an LPC summer math class since they are all full at that point and there is no time to add and staff an additional class. The department is in the process of working on a way to allow HS students to earn credit by exam (CBE) in early May so that we can better understand our enrollment needs and offer the appropriate amount of classes. However, if the numbers match what they were in previous summers, this will be a lot of CBEs to grade. There is currently no compensation for faculty to grade those exams, which means there isn't a lot of buy-in from faculty to want to move forward with this endeavor, which means we will miss out on concurrent enrollment opportunities.

2. What are the most important things your program observed with respect to student learning, equity, and success in 22-23? This could be related to your SLOs or from other sources.

Instead of looking at SLO data, we wanted to get a bigger picture of what is going on at the course level of our classes based on Gender and Race/Ethnicity. IR graciously ran some data for us to explore and below are some key takeaways that we want to explore further through IR and SLO data.

STEM Transfer

- First semester students: Math 30, 39, 1 = 647 enrollments
- Likely, second semester students: Math 2, 3, 5, 7, 10 = 267 enrollments
- Female v. male disproportionate impact in enrollment in all courses.
 - Success: Math 30 and 39, Female students are marginally more successful in passing those classes, but less so in Math 1 and higher.
 - Persistence: Female students do seem more likely to persist in taking a math class during the following semester for Math 30 and 39, but once they get to Math 1, etc. a smaller percentage persist in taking those higher level courses.
 - We would like to explore more regarding the drop-off of female students in our STEM pathway.
 - Market our classes specifically to potential female students to increase sense of belonging and potential careers?
 - Collaborate with STEM disciplines and local High Schools?
- Asian, White and Latina/o/x make up most of our enrollments in the STEM sequence.
 - Latina/o/x success rates are lower than other groups, especially in Math 30, Math 39 and Math 3.
 - We would like to know how successful our PUENTE cohorts are and if these supports should be expanded. Also a further breakdown by gender and time of course.
- Black/African American, Filipino, Native American, Pacific Islander and Multi-Ethnic enrollments are low, but in proportion with LPC enrollments, so we do not feel, nor did the data support, a disproportionate impact in those enrollments. There may be some

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disproportionate impact in success data, but with such small enrollment numbers it is hard to tell. We're going to watch a couple of groups in future data reports to see if there is a trend.

Business:

- For Math 34 (88 enrollments), the overall percent success rate was proportionately higher than other BSTEM transfer level classes (although overall enrollment was lower than the others).
 - We noticed that female students (n=37) had a relatively low persistence rate if they failed or got a "W."
 - We do not understand why there is a significant discrepancy between male and female persistence (males had 100% persistence), so further investigation needs to be done.
 - Latin-X and Native American students had relatively low persistence if they failed or withdrew, consistent with results across other BSTEM courses.

SLAM Classes:

- Math 47 (Math for Liberal Arts) - 94 enrollments
- Math 40 (Statistics and Probability) - 689 enrollments
 - 2 to 1 ratio of female to male, but not considered disproportionately impacted.
 - Race/Ethnicity:
 - Black/African American students are disproportionately impacted in Enrollment, but only marginally in their success in the course.
 - Latina/o/x students are fine with access to the course, but are also marginally disproportionately impacted in their success.
- The number of enrollments in statistics alone is more than the total number of students in Math 30, 39 and 1 combined. The number of statistics courses we offer every semester has increased dramatically with AB 705/1705 as students are getting scared out of Algebra due to lack of preparation before coming to LPC and once at LPC.
- With the new placement scheme coming to LPC starting Fall 2025, it is becoming more and more likely that STEM in general will see lower enrollment.

3. Got anything new planned for 23-24?

- Preparing to add Math 1 - Calculus I into our Emporium classes.
- Pilot OER for Calculus in a few sections Spring 2024
- Cookies & Conversations to increase equitable and engagement practices in our classrooms - embrace Caring Campus commitment behaviors for faculty.
- Piloting hard-linked concurrent support for Puente Cohorts (for Math 30, 39 and 40), Math 40, and Math 1.
- Offering Math Jam in the evenings for a shorter block of time. Fall 23 sections canceled due to low enrollments. Trying again in the Spring 24.
- Collaborating with Business Department to add BUSN 33: Personal Financial Management for consideration of satisfying B4: Mathematics/Quantitative Reasoning for CSU GE

CTE UPDATE (CTE PROGRAMS ONLY): SECTION TWO

Vicki Shipman will provide you with or support any data needs

LABOR MARKET CONDITIONS: EXAMINE YOUR MOST RECENT LABOR MARKET DATA (WITHIN THE LAST 2 YEARS).

1. Demonstrate labor market need (demand – completers = need); projected growth for the next five years.
2. What is the median income for occupations within your program?

ADVISORY BOARDS:

1. Has your program complied with advisory board recommendations?
 - i. _____YES _____No
2. If not, please explain.

STRONG WORKFORCE PROGRAM METRICS: UTILIZING LAUNCHBOARD, REVIEW THE STRONG WORKFORCE PROGRAM METRICS. REVIEW THE DATA AND THEN REPORT ON YOUR SPECIFIC PROGRAM.**Data Reporting Notes:**

Data are suppressed according to FERPA to protect students' personally identifiable information. Suppression takes place when too few students are included in the metric. Meaning, if there is not data, your program did not have a minimum of ten (10) students for this metric.

LaunchBoard data metrics lag in terms of academic year reporting. For your program review

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SWP metrics, report on the latest year available with a notation of the year. Meaning, if there is not data, your program did not have a minimum of ten (10) students for this metric.

C1. STRONG WORKFORCE PROGRAM STUDENTS

Report on students in your program who took at least 0.5 units in any single credit course or who had at least 12 positive attendance hours in any noncredit course(s) in the selected year or who enrolled in noncredit course(s) in Spring 2020 or any term in academic year 2021 and who enrolled on a TOP code that is assigned to a vocational industry sector in the selected year.

How may these metrics improve?

C2. SWP STUDENTS WHO EARNED 9 OR MORE CAREER EDUCATION UNITS IN THE DISTRICT IN A SINGLE YEAR

Report on students in your program, the proportion who successfully completed nine or more career education semester units in the selected year within a single district

How may these metrics improve?

C3. SWP STUDENTS WHO COMPLETED A NONCREDIT CTE OR WORKFORCE PREPARATION COURSE

Report on students in your program with a noncredit enrollment on a CTE TOP code or a noncredit enrollment in a workforce preparation course, the proportion who completed a noncredit CTE or workforce preparation course or had 48 or more contact hours in a noncredit CTE or workforce preparation course(s) in the selected year

How may these metrics improve?

C4. SWP STUDENTS WHO EARNED A DEGREE OR CERTIFICATE OR ATTAINED APPRENTICESHIP JOURNEY STATUS

Report on students in your program the number of unduplicated SWP students in your program who earned a noncredit certificate, Chancellor's Office approved certificate, associate degree, and/or CCC baccalaureate degree on a TOP code assigned to a vocational sector and who were enrolled in the district on any TOP code in the selected year or who attained apprenticeship journey status on a vocationally flagged TOP code in the selected year and who were enrolled at any community college at the start of the apprenticeship program on a vocationally flagged TOP code

How may these metrics improve?

C5. SWP STUDENTS WHO TRANSFERRED TO A FOUR-YEAR POSTSECONDARY INSTITUTION

Report on students in your program who earned 12 or more units at any time and at any college at any time up to and including the selected year and who exited the community college system, the number of students who enrolled in any four-year postsecondary institution in the subsequent year

How may these metrics improve?

C6. SWP STUDENTS WITH A JOB CLOSELY RELATED TO THEIR FIELD OF STUDY

Report on students in your program who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

How may these metrics improve?

C7. MEDIAN ANNUAL EARNINGS FOR SWP EXITING STUDENTS

Report on students in your program who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit

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How may these metrics improve?

C8. MEDIAN CHANGE IN EARNINGS FOR SWP EXITING STUDENTS

Report on students in your program students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry (for the first time ever as a non-Special Admit or return to any community college after an absence of one or more academic years) and the second quarter after the end of the academic year of exit from the last college attended.

How may these metrics improve?

C9. SWP EXITING STUDENTS WHO ATTAINED THE LIVING WAGE

Report on students in your program who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit.

How may these metrics improve?