PROGRAM REVIEW Fall 2021

Program: Mathematics Department
Division: STEM
Date: October 15, 2021
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SLO/SAO Point-Person: Jennie Graham

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 the processes of creating Division Summaries, determining College Planning Priorities and allocating resources. A 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 2021-22 academic year. It should describe plans starting now and continuing through 2022-23.

Sections: There are three 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 is a review of curriculum, to be filled out only by programs with curriculum.
- The third section is a review for CTE programs, to be filled out only by these programs.

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 when?

Links:

Program Review Home Page
Fall 2020 Program Reviews
Frequently Asked Questions

Section One: Your Program In 20-21 – Please check N/A where relevant

A. Accomplishments: How did your Program's accomplishments during AY20-21 support the newly revised college mission, the goals of the Educational Master Plan, and/or the President's Call to Action on anti-racism? *Areas to consider include impacts to students by race/ethnicity, gender, sexuality, age, or disability status, or those disproportionately impacted by the shift to remote instruction and services.*

- *College Mission*
- *Educational Master Plan*
- *Presidential Task Force: Call to Action*

Description	Mission	Master Plan	Presidential Task Force
1 Math Emporium started to offer its first transfer-level math course (statistics). Students can now take a transfer-level math course in a self-paced mode.	X		
2 Math 40 (statistics) classes in emporium have decided to move away from the textbook used in lecture math 40 courses in favor of an OER textbook, so there is no cost to the students.	X		
3 Several of our full-time faculty attended UMOJA training with the intent to offer equity-minded classes in a targeted learning community for Math 30, 39, 40, and Concurrent Support.	X	X	X
4 We worked with Emerald Templeton to brainstorm offering math classes at the FCI Dublin Women's Prison.	X	X	
5 The curriculum for our new course, Math 27 (Number Systems for Educators), was approved. We planned to offer this class for the first time during the 2021-2022 academic year.	X	X	
6 Thanks to our fantastic tutorial center staff, we had an amazing year for math tutoring (especially with Penji, a mobile tutoring platform). Even in this unexpected, fully online environment, the tutorial center was heavily utilized for mathematics tutoring and support.	X	X	
7 A math department Discord server was widely used by the student community.	X		
8 Our SCFF Math Momentum Project to improve student retention was a success.	X	X	X
9 We developed an OEI class for Math 55.	X	X	
10 We continued to offer online SMART shops and workshops for students.	X		
11 Members of our department continue to serve as campus leaders across the board, including Basic Skills, Curriculum, Distance Education, Guided Pathways, AGS,	X	X	

UndocuAlly, SEA, Professional Development, and Academic Senate.			
12 The Math Society continued to operate and hold meetings & presentations during the pandemic.	X		
13 Our math course success rates (Spring 2021) were at or above our program set standard for asynchronous, synchronous, and combination classes.	X	X	
14 Specific math courses that had high success rates (at or above our program set standard for Spring 2021) include Math 1 (A/S/B), Math 2 (A/S), Math 3 (S), Math 5 (S), Math 10 (S), Math 34 (A/S), Math 39 (A/S), Math 40 (B), Math 47 (B), Math 50 (S), and Math 55 (A). Here, (A) stands for asynchronous, (B) stands for combo, and (S) stands for synchronous.	X	X	
15 We streamlined the graphing calculator program for students, leveraging library resources and staff for assistance. The calculators were loaned to the students for a whole semester for free.	X	X	
16 Through community outreach, we are working to offer multiple credit and non-credit Geometry sections in response to local high schools' demand.	X	X	

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B. Challenges, Obstacles and Needs: What significant challenges or obstacles did your Program face during AY20-21 in supporting the newly revised college mission, the goals of the Educational Master Plan, and/or the President's Call to Action on anti-racism? *Areas to consider include impacts to students by race/ethnicity, gender, sexuality, age, or disability status, or those disproportionately impacted by the shift to remote instruction and services.*

_____N/A

Description	Mission	Master Plan	Presidential Task Force
1 Students and faculty alike faced challenges obtaining and using technology as part of the remote learning transition.	X		
2 Reassigned time is not adequate for the full scope of responsibilities assumed by the Department Coordinator.			
3 Pandemic timed faculty shortage results from part-time faculty resignations and an overdue full-time faculty replacement. We need a replacement position filled (for Craig Kutil) and ideally two additional full-time faculty members to fulfill all the responsibilities and department initiatives.			
4 Declining enrollment and canceled classes adversely impacted faculty and students.	X	X	
5 Courses' financial accessibility warrants consideration and piloting of Open Education Resources instead of currently assigned textbooks.	X	X	X

6 Emporium mode of instruction needs reassigned time to support the Department Initiative. Changes to these student supports have VERY slowly due to instructors needing to split time between their full load and improve these supports. Concurrent support could also use an Instructional Assistant to help facilitate the running of the Blueprint Canvas courses, student understanding, coordination of part-time instructors, and collaboration with the faculty coordinators.	X	X	
7 Students are taking unnecessary courses prolonging community college enrollment.		X	
8 Pandemic-timed educational shifts towards increased online course offerings to propel technology needs that are not financially sustainable through faculty personal investment. Many faculty purchased their technology to facilitate teaching online effectively.	X	X	
9 Pandemic-timed educational shifts towards continued professional development to train faculty members for online courses.	X	X	
10 Pandemic-timed educational shifts towards an increased workload for the department planning and scheduling of courses. Also, as we head back to in-person learning, there is significant planning to decide the number of online sections and available resources (classrooms, labs). The post-AB 705 environment is still impacting the course offerings with a high demand for Statistics which needs lab space.	X	X	
11 Due to the pandemic and uncertainty surrounding success rates in our basic skills classes, we are unsure of what our course offerings should be, going forward. We are also waiting on an MOU from the state that will detail the steps we need to take if we keep offering the basic skills classes.			
12 **Emporium**. As nearly all of our basic skills classes are offered in this mode, we are trying to determine how best to proceed with our Emporium model. Our challenges are: Enrollments are shifting dramatically due to AB 705. Placement in these courses is no longer done through assessment. Students can decide to take a transfer-level course regardless of their math background. Students should not have to pay hefty prices for course materials needed for those classes when the classes are not a requirement (or even when they are, really) so we are converting all of our basic skills course materials to Open Educational Resources, which are free to students. This way, students can choose to take these courses at no charge	X	X	

when taken as non-credit classes. In making this switch, we are also streamlining how the students learn the material and fixing some mistakes made in our previous incarnation of the course setup. So far, students who are using the new process seem to be responding well, and in a course where we typically see the lowest success rates (Math 55/NMAT 255) I think we will have much higher success this semester. The challenge is finding the time to make this transition happen as fast as possible without compromising quality. With lower enrollments in basic skills classes and a desire from students to continue their self-paced learning into the transfer-level courses, we are going through the motions of getting the material for those classes set up, but it is slow going. As our faculty know, there is not enough time to make the updates while teaching full time. We are lucky to use some SCFF funding to support the work, but it does not replace the full-time load, so while the funding is welcome, it does nothing about adding more time to our days. The overall success rates of classes offered in Emporium mode are sadly trending downward, with a slight uptick last Spring. But the inaccuracy of the data due to AB 705 and the pandemic switch to fully online is problematic and does not paint an accurate picture of what this mode is capable of doing for some of our students. The data does show that the Spring semester's success rates tend to be higher than the Fall semester success rates, which makes sense from an Emporium point of view since students who didn't finish in the Fall, will complete in the course in the Spring. Looking at the data for these courses (at a student level) very different success stories emerge: a student will start 107, but not finish it. That same student will start 110, but not finish it. That same student will then take 40 and complete it in 1 semester. Their journey was one of building confidence in the material to succeed in their transfer-level course. This progression of learning what the student feels they need and then moving on is repeated over and over again. But, because they never finished their foundational course, the traditional success rates are not capturing them. We need to advertise this mode to the right students. Who is signing up for Emporium classes? The data confirms what we see in these classes from semester to semester. We see older students in the 25 - 50 or older range than the lecture classes do. This aligns with the other data showing typically more continuing and returning students as well.			

Anecdotally, since we are not sure how to measure this, we also see a lot of ESL students who are using these classes to review the math and practice their English as well and students referred from DSPS. The one-on-one nature of the review and ability to learn their paces makes these classes ideal for many of these students. However, one of the issues we constantly face is students signing up for a time/day of the week and an instructor instead of the mode of the course. Students should not be in the Emporium mode if they do not have the independent learning chops and self-motivation to stay on task and complete the course. While we prompt this behavior and offer skills-based learning and assignments that encourage it, that does not seem to be enough for all students. We have information about the course in the class notes, and before the start of every semester, we email our emporium students to let them know what kind of class they have signed up for. The emails help a little bit, but students either are not reading the email or are not comprehending the explanation.			

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

_____N/A

Plan	New	Continuing	Short term	Long term
1 We pared down our Business Calculus (Math 34) curriculum to better align with C-ID and CSU transfer requirements. This class will officially become a 4-unit class (down from 5-units) during the Fall 2022 semester.	X			X
2 We continue to research, develop, and implement OER for students. We have several communities of practice closely examining OER content.		X		X
3 We are developing more transfer-level curricula for Emporium (i.e., Math 30 and 39) and addressing the low success rates in some of our existing Emporium classes.		X		X
4 We plan to incorporate equity discussions and curriculum into all of our math classes.	X		X	X
5 We plan to continue participating in equity training and offer dedicated, equity-minded classes in a targeted learning community such as Umoja, Puente/Latinx, and Veterans for Math 30, 39, 40, and Concurrent Support.	X		X	X

6 We plan to continue exploring best practices for concurrent support classes, including offering them in a combination face-to-face/synchronous modality.		X	X	X
7 We continue to explore offering a robust summer geometry course to fulfill the needs of the local community (i.e., local area high schools)		X	X	
8 We plan to offer Math Jam beginning in Spring 2022, assuming a return to campus.			X	
9 We plan to schedule classes mindfully, taking into account students' diverse needs in the pandemic's greater socioeconomic context - this means continuing to offer courses predominantly in-person while keeping an ample supply of diverse online offerings.		X		X
10 We are working to re-envision math department coordination in the context of professional responsibilities for part-time and full-time faculty, especially for the coordinator working during holidays and summers.	X			X
11 We continue to align our curriculum with local area high schools through high school alignment meetings.		X		X
12 We are working to improve distance education success rates through communities of practice and professional development.	X		X	X
13 We continue to evaluate SLOs regularly through Closing-the-Loop discussions.		X	X	X
14 We continue to offer SMART Shops around holistic learning support for students, such as in brain research and learning, test preparation, using a graphing calculator, and math anxiety. We hope to expand our offerings shortly.		X		X
15 We intend to work with our new assessment coordinator to improve the self-placement and onboarding process for students which math pathway to take.	X	X	X	X

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D. How have your program's interactions with the larger campus systems benefitted your students? For example, working with allocation committees, participation on committees, etc.

_____N/A

Campus system or Committee	How has it benefitted your students?
UMOJA/Puente Classes	These courses intend to improve the retention and success rates of students of color.
Middle College Classes	These courses intend to prepare high school students for college-level work.

Library and Calculator Rentals	These resources help low-income students obtain critical educational resources to aid in their retention and success.
Tutorial Center	They provide embedded tutoring in courses and educational resources for students, improving student retention in success. Our tutorial center direction, Jin Tsubota, is supportive and resourceful to our department and students.
Curriculum	Our courses improve ease of transfer and diploma/certificate completion.
CTE	We developed a welding/math partnership (through a CTE grant) to design tech math classes that better suit the needs of our welding students.
Academic Senate	We discuss important issues facing our faculty, students, and staff that improve our general communication & service with the campus and its constituent groups.
SEA & MLEA	These committees strive to improve retention, success rates, and services for underrepresented student groups.
Guided Pathways	The work on this committee aids student progress to their degree/certificate goals through clearly defined and articulated academic/transfer pathways.
Open Educational Resources (OER)	The intention behind using OER is to address affordability and accessibility issues for students while providing them with outstanding curriculum.
Online Education Initiative (OEI)	The Online Education Initiative (OEI) is a collaborative effort among California Community Colleges to ensure that significantly more students complete their educational goals by increasing access and success through high-quality online courses.
Professional Development (PDC)	The math department holds workshops and attends them to learn/share new skills intended to improve instruction and increase student success.
Joint Chabot-Las Positas College Department Meetings	We hold three (3) of these meetings each year – one at Convocation, one during the Fall Semester, and another during the Spring Semester – intended to develop community among our math faculty and provide a sense of belonging for our part-time faculty. We share

	strategies and techniques at these meetings with each other.

E. 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.	**Outreach to K-12 Districts** David Powers and Jennie Graham met with the math departments at each local high school to explain the different modes of instruction and the various math pathways offered at the college. Teachers had a chance to ask questions and were encouraged to follow up if they, their students, or parents had questions. The LPC math department hosted an alignment meeting with the math chairs from each local high school. Everyone was able to share out new things that were taking place or changes that were being made. **Outreach to LPC Students** SCFF Math/Tutoring Project involves trained tutors calling every LPC math student who withdrew or was unsuccessful in a math course to connect with them, listen to their experience, encourage persistence and discuss academic and student supports. Every first-transfer-level math student and Calculus I student is emailed several times before and during the first week of the semester to ensure they know about the free concurrent support classes and tutoring program at LPC. Every email is responded to with substantive support and information to ensure all students feel supported.
What did you learn?	**Regarding K-12 Partners** Many of the high school teachers were unaware of the different modes of instruction offered at the college. Most also did not have a point of contact.

	Math faculty from the high schools and LPC were able to discuss many common issues. The most prominent topic was the recent move to online learning, and the challenges/solutions faculties at all the schools had come up with to continue to meet students' needs. **Regarding LPC Students** We learned that many of our students struggled with technology during the pandemic, balancing home, work and school, and finances. We also knew that more persistence and online teaching professional development was needed in some cases.
How will you use the feedback?	**Regarding K-12 Partners** One of the big hopes is that with help from their high school math teachers, incoming students will have a better idea of what mode of instruction to take—Synchronous versus asynchronous; Lecture versus Emporium. Students can choose the class that is right for them. The faculty shared solutions to some of the challenges that come up with teaching and learning math online. We also chose to offer a summer geometry class with a lab component based on feedback from high school teachers. **Regarding LPC Students** We are working hard in our first-transfer level communities of practice and Emporium mode to move our MATH 40, 30, and 39 to OEI materials to help with finances. Canvas shells for MATH 30 and 39 are being developed for all faculty to use that include best practices for online education, including quality support videos based on key math concepts by section. Embedded Tutors are available in concurrent support classes, giving students quality peer and instructor support.

	We increased the number of math faculty participating in the persistence project, communities of practice, and equity training.

Section Two: Data Analysis – Quantitative and Qualitative

A. IR Data Review: Describe any significant trends in your program's data provided by the office of Institutional Research 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.) You may also discuss any other data used by your program for decision-making and planning.

- IR Data packets are available here: https://bit.ly/2IYaFu7
- Course Success Rates Dashboard can be found at the bottom of this page: https://bit.ly/2Y9vGpl

Enrollment was already declining before the pandemic but sharply declined during it - this was true across all demographics. Some of the declines from before might be explained by AB 705 reducing the required math courses students have to take. Fill rates declined as well during the shift to distance learning.

There was a noticeable shift from face-to-face to distance education classes reflecting in the data as well. Overall success rates remained relatively constant despite the change to distance learning. Success rates for distance education increased significantly - these success rates have been typically meager, so the shift of all classes to distance education brought them close to the overall average.

MATH/NMAT Course Success Rates: Course-Level Detail (Academic Year**)**

			Reference Years								Evaluation Y..	
			2016-17		2017-18		2018-19		2019-20		2020-21	
			Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.
MATH 50	Overall	Success	169	64%	175	59%	192	62%	77	58%	59	66%
		Non-success	38	14%	75	25%	58	19%	25	19%		
		Withdrawal	57	22%	49	16%	59	19%	31	23%	25	28%
		Total	264	100%	299	100%	309	100%	133	100%	90	100%

Math 50 enrollment levels dropped in 2019-20 when AB705 began, and the success rates may have dropped slightly. As a result, it is too soon to tell as Covid and being online affects the data. NMAT 250 data is not included, perhaps because there are too few students.

MATH/NMAT Course Success Rates: Course-Level Detail (**Fall Only**)

			Reference Years								Evaluation Y..	
			Fall 2016		Fall 2017		Fall 2018		Fall 2019		Fall 2020	
			Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.
MATH 50	Overall	Success	83	61%	97	55%	86	58%	55	60%	31	65%
		Non-success	18	13%	47	27%	39	26%	23	25%		
		Withdrawal	36	26%	31	18%	24	16%	14	15%	17	35%
		Total	137	100%	175	100%	149	100%	92	100%	48	100%

The drop in the number of students enrolled in Fall 2018 to 2019 (AB705 started but not affected by Covid) was 57. If those students all went directly to Math 40/47, then using a 60% success rate, 0.60(57) is about 34 students who in 2018 succeeded in Math 50 and enrolled in 40/47. We can predict that only about 25 of the 92 students who succeeded in Math 50 in Fall 2019 will have gone on to take Math 40/47 by summer 2021, though that data will be affected by Covid. If so, that would further support the likelihood that some students now taking Math 50 are not interested in taking college-level math.

Math 50 in FA18 had a 58% success rate. Only 68% who passed that semester went on to take Math 40 (53%) or Math 47 (15%), so about 32% of them may have only wanted Math 50.

COURSE SEQUENCE RESULTS: Outcomes in MATH 47 (by Summer 20) of Students Successfuly Completing MATH 50 in Fall 2018

Of 86 succeeding in MATH 50:		by Summer 20		Throughput**
MATH 47		Enrolled in MATH 47	Success Rates in MATH 47	MATH 50 to MATH 47
Gender	Female	18%	78%	8%
	Male	11%	75%	5%
Race-Ethnicity	African American	*	*	*
	Asian American	11%	0%	0%
	Filipino	*	*	*
	Latino	13%	67%	4%
	White	21%	88%	12%
	Multi-Ethnic	0%	-	0%
Age	24 or younger	16%	73%	7%
	25 or older	11%	100%	7%
Disability	Any Disability	57%	75%	21%
	No Disability	11%	78%	5%
Full Time/ Part Time	Full Time (12+ units)	19%	78%	9%
	Part Time (6-11.5 units)	9%	67%	3%
	Part Time (0-5.5 units)	17%	100%	10%
Total Students		15%	77%	7%

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 50 who succeeded in MATH 47.*

COURSE SEQUENCE RESULTS: Outcomes in MATH 40 (by Summer 20) of Students Successfuly Completing MATH 50 in Fall 2018

Of 86 succeeding in MATH 50:		by Summer 20		Throughput**
MATH 40		Enrolled in MATH 40	Success Rates in MATH 40	MATH 50 to MATH 40
Gender	Female	52%	85%	26%
	Male	57%	85%	27%
Race-Ethnicity	African American	*	*	*
	Asian American	67%	83%	36%
	Filipino	*	*	*
	Latino	58%	71%	20%
	White	49%	89%	28%
	Multi-Ethnic	40%	100%	18%
Age	24 or younger	60%	83%	28%
	25 or older	28%	100%	18%
Disability	Any Disability	14%	100%	7%
	No Disability	57%	84%	28%
Full Time/ Part Time	Full Time (12+ units)	60%	90%	33%
	Part Time (6-11.5 units)	50%	75%	20%
	Part Time (0-5.5 units)	17%	100%	10%
Total Students		53%	85%	26%

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 50 who succeeded in MATH 40.*

MATH/NMAT Course Success Rates: Course-Level Detail (**Academic Year**)

			Reference Years										Evaluation Y..	
			2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
			Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.
MATH 55	Overall	Success	793	55%	563	52%	441	48%	322	45%	167	37%	137	46%
		Non-success	292	20%	231	21%	214	23%	184	26%	88	20%	48	16%
		Withdrawal	349	24%	297	27%	271	29%	203	29%	196	43%	113	38%
		Total	1,434	100%	1,091	100%	926	100%	709	100%	451	100%	298	100%
NMAT 255	Overall	Success									1	9%	2	12%
		Non-success									3	27%	11	65%
		Withdrawal									7	64%	4	24%
		Total									11	100%	17	100%

Success rates and the number of students enrolling in Math 55 has been declining since 2015, with a large drop in 2019-20 due to AB705 though success rates may be about the same.

Looking at the throughput data below, it is tougher to determine how many students successfully completed Math 55 and chose not to enroll in a college level class as there is some duplication in the results. If we just consider Math 40/47/30/34 the enrollment is 100% and the throughput is 42%, which is too high due to overlap between Math 40/30/34. I am sure somewhere there is accurate data so we can decline to speculate.

Las Positas College
Sequence: MATH 55 → MATH 40
Timeframe: Fall 2018 → Summer 20

STARTING COHORT: Fall 2018 MATH 55 Success Rates by Demographic

MATH 55		Fall 2018						
		Success		Non-success		Withdrawal		Total
Gender	Female	95	56%	35	21%	39	23%	**169**
	Male	100	49%	64	31%	41	20%	**205**
Race-Ethnicity	African American	2	18%	7	64%	2	18%	**11**
	Asian American	21	47%	13	29%	11	24%	**45**
	Filipino	13	76%	2	12%	2	12%	**17**
	Latino	63	51%	30	24%	30	24%	**123**
	White	76	52%	39	27%	30	21%	**145**
	Multi-Ethnic	20	56%	9	25%	7	19%	**36**
Age	24 or younger	155	51%	85	28%	62	21%	**302**
	25 or older	41	53%	16	21%	20	26%	**77**
Disability	Any Disability	15	47%	14	44%	3	9%	**32**
	No Disability	181	52%	87	25%	79	23%	**347**
Full Time/ Part Time	Full Time (12+ units)	119	57%	58	28%	33	16%	**210**
	Part Time (6-11.5 units)	74	50%	34	23%	39	27%	**147**
	Part Time (0-5.5 units)	3	14%	9	41%	10	45%	**22**
Total Students		**196**	**52%**	**101**	**27%**	**82**	**22%**	**379**

COURSE SEQUENCE RESULTS: Outcomes in MATH 40 (by Summer 20) of Students Successfuly Completing MATH 55 in Fall 2018

Of 196 succeeding in MATH 55:		by Summer 20		Throughput**
MATH 40		Enrolled in MATH 40	Success Rates in MATH 40	MATH 55 to MATH 40
Gender	Female	49%	89%	25%
	Male	33%	79%	13%
Race-Ethnicity	African American	50%	100%	9%
	Asian American	33%	86%	13%
	Filipino	46%	83%	29%
	Latino	54%	82%	23%
	White	30%	87%	14%
	Multi-Ethnic	45%	89%	22%
Age	24 or younger	44%	84%	19%
	25 or older	32%	92%	16%
Disability	Any Disability	13%	100%	6%
	No Disability	44%	85%	19%
Full Time/ Part Time	Full Time (12+ units)	49%	88%	24%
	Part Time (6-11.5 units)	30%	77%	12%
	Part Time (0-5.5 units)	33%	100%	5%
Total Students		41%	85%	18%

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 40.*

If a student repeats a course within the time period then the latest grade is taken for determining enrollment and

COURSE SEQUENCE RESULTS: Outcomes in MATH 47 (by Summer 20) of Students Successfuly Completing MATH 55 in Fall 2018

Of 196 succeeding in MATH 55:		by Summer 20		Throughput**
MATH 47		Enrolled in MATH 47	Success Rates in MATH 47	MATH 55 to MATH 47
Gender	Female	4%	100%	2%
	Male	5%	100%	2%
Race-Ethnicity	African American	50%	100%	9%
	Asian American	0%	-	0%
	Filipino	0%	-	0%
	Latino	3%	100%	2%
	White	7%	100%	3%
	Multi-Ethnic	5%	100%	3%
Age	24 or younger	5%	100%	2%
	25 or older	5%	100%	3%
Disability	Any Disability	7%	100%	3%
	No Disability	4%	100%	2%
Full Time/ Part Time	Full Time (12+ units)	4%	100%	2%
	Part Time (6-11.5 units)	5%	100%	3%
	Part Time (0-5.5 units)	0%	-	0%
Total Students		5%	100%	2%

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 47.*

If a student repeats a course within the time period then the latest grade is taken for determining enrollment and

COURSE SEQUENCE RESULTS: Outcomes in MATH 39 (by Summer 20) of Students Successfuly Completing MATH 55 in Fall 2018

Of 196 succeeding in MATH 55:		by Summer 20		Throughput**
MATH 39		Enrolled in **MATH 39**	Success Rates in **MATH 39**	MATH 55 to MATH 39
Gender	Female	31%	79%	**14%**
	Male	40%	70%	**14%**
Race-Ethnicity	African American	0%	-	**0%**
	Asian American	43%	78%	**16%**
	Filipino	69%	56%	**29%**
	Latino	27%	82%	**11%**
	White	37%	75%	**14%**
	Multi-Ethnic	35%	71%	**14%**
Age	24 or younger	35%	74%	**13%**
	25 or older	39%	75%	**16%**
Disability	Any Disability	33%	80%	**13%**
	No Disability	36%	74%	**14%**
Full Time/ Part Time	Full Time (12+ units)	33%	74%	**14%**
	Part Time (6-11.5 units)	42%	74%	**16%**
	Part Time (0-5.5 units)	0%	-	**0%**
Total Students		**36%**	**74%**	**14%**

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 39.*

COURSE SEQUENCE RESULTS: Outcomes in MATH 30 (by Summer 20) of Students Successfuly Completing MATH 55 in Fall 2018

Of 196 succeeding in MATH 55:		by Summer 20		Throughput**
MATH 30		Enrolled in **MATH 30**	Success Rates in **MATH 30**	MATH 55 to MATH 30
Gender	Female	37%	86%	**18%**
	Male	46%	78%	**18%**
Race-Ethnicity	African American	0%	-	**0%**
	Asian American	48%	80%	**18%**
	Filipino	69%	56%	**29%**
	Latino	37%	87%	**16%**
	White	43%	82%	**19%**
	Multi-Ethnic	30%	100%	**17%**
Age	24 or younger	42%	78%	**17%**
	25 or older	39%	94%	**19%**
Disability	Any Disability	40%	100%	**19%**
	No Disability	41%	80%	**17%**
Full Time/ Part Time	Full Time (12+ units)	37%	75%	**16%**
	Part Time (6-11.5 units)	47%	89%	**21%**
	Part Time (0-5.5 units)	67%	100%	**9%**
Total Students		**41%**	**81%**	**17%**

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 30.*

COURSE SEQUENCE RESULTS: Outcomes in MATH 34 (by Summer 20) of Students Successfuly Completing MATH 55 in Fall 2018

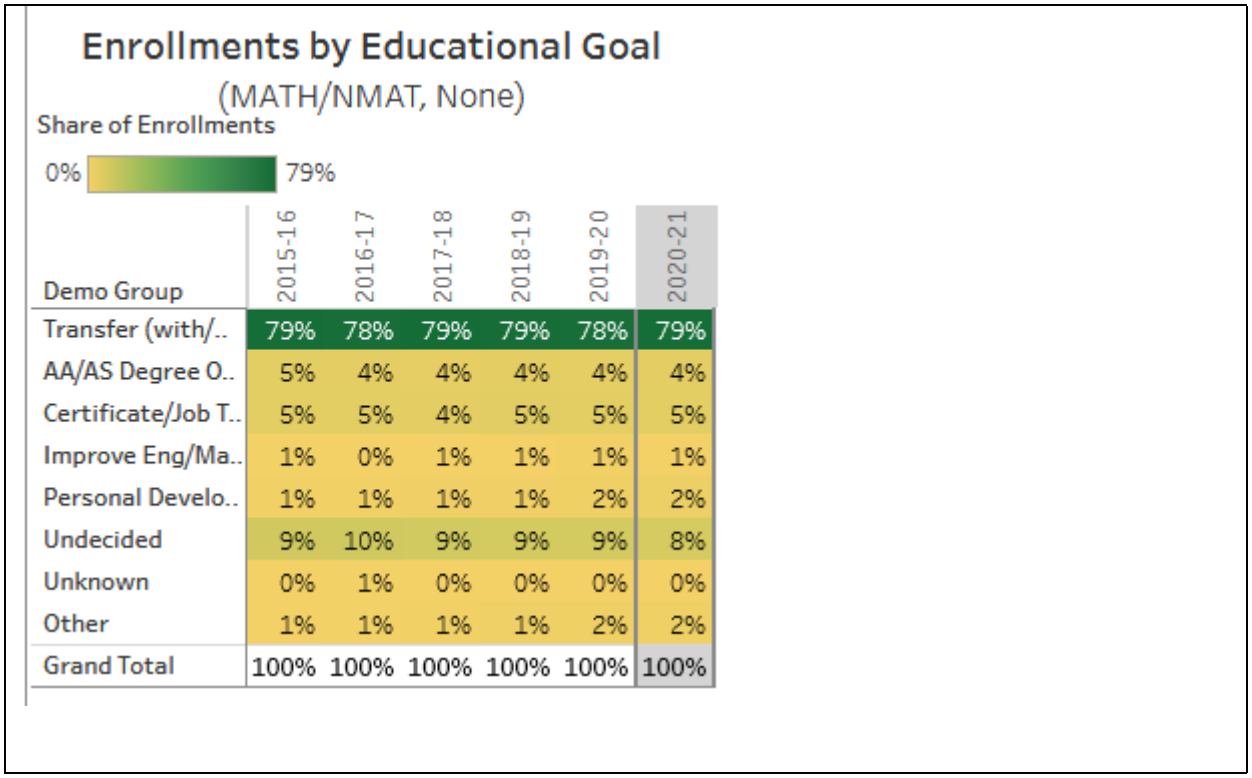
Of 196 succeeding in MATH 55:		by Summer 20		Throughput**
MATH 34		Enrolled in MATH 34	Success Rates in MATH 34	MATH 55 to MATH 34
Gender	Female	9%	89%	5%
	Male	17%	65%	5%
Race-Ethnicity	African American	50%	100%	9%
	Asian American	14%	100%	7%
	Filipino	15%	100%	12%
	Latino	14%	67%	5%
	White	12%	67%	4%
	Multi-Ethnic	10%	50%	3%
Age	24 or younger	14%	67%	5%
	25 or older	12%	100%	6%
Disability	Any Disability	7%	100%	3%
	No Disability	14%	72%	5%
Full Time/ Part Time	Full Time (12+ units)	18%	77%	8%
	Part Time (6-11.5 units)	5%	50%	1%
	Part Time (0-5.5 units)	0%	-	0%
Total Students		13%	73%	5%

*Note: *Categories with less than 10 students are not shown.*

***Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 34.*

Interestingly, while 100% of students who passed Math 55 and enrolled in Math 47 passed, the throughput is only 2% because only 5% of those who passed took Math 47. This means if a student (say a CTE student) only takes Math 50 or 55 because that is ALL THEY WANT, and they pass, they are counted in the "didn't make it through a college-level course" group for our throughput. This seems consistent with the data below showing that roughly 12% of students are interested in 2-year degrees, certificates, and personal growth. Approximately 12% (about 670 out of 5400 enrollments) were in developmental math.

As statewide data shows that students aiming for completing a college-level math course are more successful completing that within one year if they initially enroll directly into that college level course with supports, we should strive to inform our students to make sure they are aware that they should enroll directly into those courses, if that is their goal. Perhaps we could consider having slightly fewer Math 50/55 courses.



Enrollments by Educational Goal

(MATH/NMAT, None)

Share of Enrollments

0% 79%

Demo Group	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Transfer (with/..	79%	78%	79%	79%	78%	79%
AA/AS Degree O..	5%	4%	4%	4%	4%	4%
Certificate/Job T..	5%	5%	4%	5%	5%	5%
Improve Eng/Ma..	1%	0%	1%	1%	1%	1%
Personal Develo..	1%	1%	1%	1%	2%	2%
Undecided	9%	10%	9%	9%	9%	8%
Unknown	0%	1%	0%	0%	0%	0%
Other	1%	1%	1%	1%	2%	2%
Grand Total	100%	100%	100%	100%	100%	100%

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 may be many 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.*

N/A

SLOs/SAOs:

For assistance with these questions, contact the SLO Committee Chair. [https://bit.ly/3fY7Ead]

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.

You should complete ONE of the following three sections. Please choose the option that is most appropriate for your program:

C1: Instructional Programs with PSLOs
C2: Instructional Programs without PSLOs or with Special Circumstances
C3: Non-Instructional Programs

Go directly to the section you chose. If you are not sure which option to pick, contact the SLO Committee Chair or Program Review Committee Chair for assistance.

C1: Instructional Programs with PSLOs

PSLO Assessments:

(1) Please list the PSLO(s) that were reviewed in this last cycle and explain why these were chosen.

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

(3) Did you get the assessment data that you needed to complete this report? If not, then describe the barriers that you can identify. _____YES _____No

All but one of the courses has some data associated with it, so we are in pretty good shape, but it isn't a complete picture. Also, with just half of the instructors participating in this assessment, I question whether or not we have sufficient information to take this data at face value.

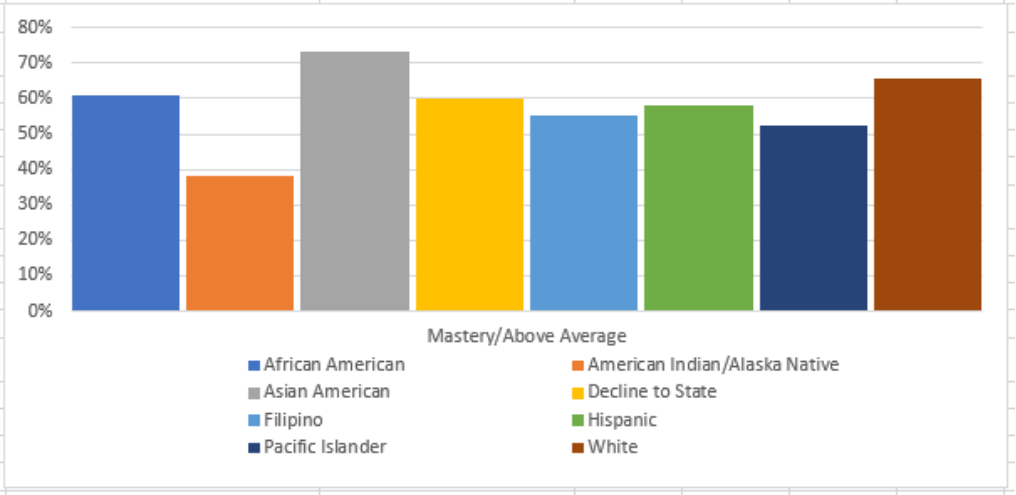
(4) Discuss the findings of the PSLO(s) that were up for review last year (according to your 3-year planning template). What conclusions can be drawn about student learning?

I don't know that we can draw accurate conclusions about our students' learning using this incomplete data set. According to what we have, though, the overall success rate based on Mastery and average scores is 65%. 21% were at an average level, and only 14% were at Below Average or No Demonstrated Achievement. For these transferable math classes, it appears that students are getting what they need out of the course when it comes to modeling. However, it was pointed out that for some of these courses, the material being assessed appears at the end of the semester, which can mean that it isn't covered as well, especially now as it can take longer to facilitate quality online learning.

(5) Was the data disaggregated and, if so, on what parameters? What, if any, equity issues emerged?

Yes. We looked at the data disaggregated by Ethnicity.

Ethnicity	Mastery/Above Average	n(E)	N
African American	61%	25	41
American Indian/Alaska Native	38%	8	21
Asian American	73%	250	341
Decline to State	60%	6	10
Filipino	55%	42	76
Hispanic	58%	111	191
Pacific Islander	52%	11	21
White	66%	272	415



These math classes are predominantly White and Asian American students, but the above enrollment numbers are proportionate to the demographics of LPC. For the most part, except for the American Indian/Alaska Native category, there doesn't seem to be any glaring disparities in student learning. Given the gaping holes in our data sets, the American Indian/Alaska Native students are so few in number that it is hard to track them accurately. However, if we look at the data by class, two students took Math 1. Still, they did not earn a Master/Above Average, two took Math 3, and both of them scored in the Mastery/Above Average, and fifteen took Math 40, but only 5 achieved Mastery/Above Average. It was pointed out in the Math 40 (Stats) discussion that the more prominent student groups: Hispanic, White, Asian, are all doing over 10% better than the other groups and that perhaps we need to focus on ways to make sure all students feel like they belong.

More data analysis follows in (6).

(6) List changes that you plan on making to improve student learning and address inequities.

Math 40 Discussion: Plan to have more group work with a getting-to-know-you emphasis and more inclusion of successful STEM/Math role models of various races. Try to be better about contacting students that are struggling at the beginning of the semester sooner.

Unfortunately, we were unable to close the loop on the other courses in the AS-T, but based on the data and reflections given in the SLO assessment process it looks like people are planning to:

- **Math 1:** 43%(African American) to 65%(Asian American) earn Mastery/Above Average scores, so there is not only an equity issue here but a topic that, in general, needs some attention. Instructors felt that students struggle with prerequisite knowledge required for this SLO: Geometry and interpreting word problems. Some plan to add in a geometry review; others want to emphasize the word problems in student homework assignments, have students practice these types of questions in groups for peer learning, and possibly find a way to demonstrate the concept using some physical object demonstration.

- **Math 2:** Mastery/Above Average percentages ranged from 56% (African-American) to 80% (Hispanic) for this topic. It looks like many of the reflections point to students doing well with no intention of improving the way the material is delivered to the students.

- **Math 3:** There was clearly a difference in the difficulty level of the question assigned on the final exam based on the reflections. Some felt this question was not suited for a final exam question if it was to be assessed correctly. Others thought it was just fine and in fact, wanted to change the SLO associated with this PSLO. The disaggregated data agrees with the assessment that students understand this SLO with 74% (White) to 100%(African-American and American Indian/Alaska Native) Mastery/Above Average.

- **Math 5:** There is no assessment data for this class.

- **Math 7:**The only student data recorded is for Asian (83%), White (88%) and Hispanic (67%) students. While there is a gap in understanding here, this is based on only 23 students, so it is hard to tell how accurate this is. The reflections commented that the intent is to increase the difficulty of questions asked for this assessment.

(7) Discuss the challenges, if any, to improving student learning and equity. You may refer back to items listed in Section 1B.

Math 40 Discussion:

- We need more diversity in both our student and instructor population.
- We need all staff to be aware of the disparity in student success rates and make sure they have some tools to start using immediately to help close the gap. Maybe check in with these staff members to see how the tools work for them and encourage them to try new ones.

- More paid office hours for part-time instructors would allow for more opportunities for students to meet one-on-one with their instructor for help and encouragement.

(8) Are you planning on revising your 3-year planning template? If so, describe.
_____YES ____X____No

C2: Instructional Programs without PSLOs or with Special Circumstances

CSLO Assessments:

Student Learning

(1) List the CSLO(s) that were up for review last year (according to your 3-year planning template) and explain why your department selected these CSLOs for review.

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

(3) Discussion-based analysis of student learning: Using the CSLO data and answers to the reflection questions, what type of conclusions can be made about student learning?

(4) Describe the pertinent findings. What, if any, equity issues emerged?

(5) List changes that you plan on making to improve student learning.

Assessment Process: To be completed by the department/program or the SLO Coordinator

(1) List changes that you plan on making to improve student learning and address inequities.

(2) Discuss the challenges, if any, to improving student learning and equity. You may refer back to items listed in Section 1B.

(3) Are you planning on revising your 3-year planning template? If so, describe.

_____YES _____No

C3: Non-Instructional Programs

SAO Assessments:

Support of Student Learning

(1) List the SAO(s) that were up for review last year (according to your 3-year planning template) and explain why your department selected these SAOs for review.

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

(3) Discussion-based analysis of student learning: Using the SAO data and answers to the reflection questions, what type of conclusions can be made about student learning?

(4) Describe the pertinent findings. What, if any, equity issues emerged?

(5) List changes that you plan on making to improve student learning.

Assessment Process: To be completed by the department/program or the SLO Coordinator

(6) List changes that you plan on making to improve student learning and address inequities.

(7) Discuss the challenges, if any, to improving student learning and equity. You may refer back to items listed in Section 1B. Are you planning on revising on your 3-year planning template and, if so, describe?

(8) Are you planning on revising on your 3-year planning template? If so, describe.

_____YES _____No

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

N/A

Section Three: Curriculum Review (Programs with Courses Only)

For assistance with this section, contact the Curriculum Committee Chair. [https://bit.ly/3fY7Ead]

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

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]: Are any of your courses requiring an update to stay within the 5-year cycle? List courses needing 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 (B).*

___X__YES _____No

Course Name & Number
Math 5 (Ordinary Differential Equations)-- Update was submitted September 2021

B. Degree/Certificate Updates [Curriculum Committee]: Are there any programs requiring modification? If yes, list them below.

_____YES _____X___No

Certificate or Degree

C. Are there any courses or programs for which a non-mandatory update is planned?
_____YES _____X_____Not at this time

If yes, explain details, rationale, or any support that might be helpful

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

If yes, please provide details and the rationale

Section Four: CTE Updates

(CTE Programs Only)
Vicki Shipman will provide you with or support any data needs

A. Labor Market Conditions: Examine your most recent labor market data (within the last 2 years).

1) **Does your program continue to meet a documented labor market demand?**
_____YES _____No

2) Does this program represent a training need that is not duplicated in the college's service area?
_____YES _____No

Please explain

B. Advisory Boards: Has your program complied with advisory board recommendations?
_____YES _____No

If not, please explain.

C. Strong Workforce Program Metrics: Utilizing LaunchBoard, review the Strong Workforce Program Metrics. Review the data and then answer the following questions.

C1. Does your program meet or exceed the regional and state medians **for increased enrollments, completions, and/or transfer since your last program review**?

_____YES _____No

If not, what program improvements may be made to increase this metric?

C2. Does your program meet or exceed the regional and state medians **for students gaining employment in their field of study**?

_____YES _____No

If not, what program improvements may be made to increase this metric?

C3. Does your program meet or exceed the regional and state medians **for student employment rates after leaving the college**?

_____YES _____No

If not, what program improvements may be made to increase this metric?

C4. Does your program meet or exceed the regional and state medians **for increased student earnings and median change in earnings?**

_____YES _____No

If not, what program improvements may be made to increase this metric?
