

## PROGRAM REVIEW Fall 2020

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**Program: Math**

**Division: STEM**

**Date: 10/24/2020**

**Writer(s): Howard Blumenfeld (Chair) and Math Department**

**SLO/SAO Point-Person: Jennie Graham**

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

**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 2020-21 academic year. It should describe plans starting now and continuing through 2021-22.

**Sections:** This Program Review has been shortened due to the COVID-19 pandemic. The Program Review Committee understands that you are completing this program review in a time of stress and disruption and that this may affect many of your responses. Sections and questions are marked with the name of the committee or office that will use the information.

- The first section focuses on general program reflection and planning.
- The second section has specific questions to be filled out by all programs this year.
- The third section is a review of curriculum, to be filled out only by programs with curriculum.

**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](mailto: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 as completely as possible.
- 2) If the requested information does not apply to your program, write “Not Applicable.”
- 3) Optional: Communicate with your dean about completing this document.
- 4) Send an electronic copy of this form to Nadiyah Taylor and your dean by Monday, November 11.

### **Links:**

Program Review Home Page: [laspositascollege.edu/instructionalprogramreview](https://laspositascollege.edu/instructionalprogramreview)

Fall 2019 Program Reviews: [laspositascollege.edu/programreview/pr2019.php](https://laspositascollege.edu/programreview/pr2019.php)

Frequently Asked Questions: [laspositascollege.edu/instructionalprogramreview/programreviewfaqs.php](https://laspositascollege.edu/instructionalprogramreview/programreviewfaqs.php)

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## Section One: Program Snapshot [Program Review Committee]

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

### No Significant Changes Option

Contact person: \_\_\_\_\_

By marking an X in the box above, the writers of this Program Review indicate that there have been no significant changes to their program or their program's needs in the past year. In this case, programs may opt not to complete Program Review Section One: Program Snapshot. **Programs must still complete all other sections (as applicable).**

Please note: Choosing this option means that your program's information may not be included in the yearly Division Summary.

The No Significant Changes Option may only be used for two years in a row; after two years, programs must complete a full Program Review including the Program Snapshot. Our program's most recent Program Snapshot was submitted in the following semester: Fall 20\_\_\_\_\_.

### A. Accomplishments: What plans were achieved during AY19-20? You may describe achievements that were or were not planned in earlier Program Review. Your response may include actions regarding COVID-19. Please highlight any positive impacts to students.

Enrollment trends from the previous academic year continued, with more students enrolling in upper-level STEM transfer-level classes (Math 1/2/3/5/7/10) and SLAM transfer-level classes (Math 33/40/47), while enrollments in STEM lower-level transfer-level classes did not grow as anticipated (Math 30/34/39). We added sections of upper-level STEM and SLAM courses and subtracted sections of lower-level STEM sections. Additionally, we have continued to reduce our offerings of basic skills math classes, moving all sections of 107 and 110 into Emporium and greatly reducing our offerings of 50 and 55. These changes are likely due to AB 705, Guided Pathways, post-high school placement requirements, and guided self-placement into transfer level courses without the prerequisite requirement of basic skills or foundational math classes. Overall, the math department continues to be one of the most productive departments on campus.

Concurrent support classes (Math 66C/67C/68C/100C/101C/200C/201C/202C) were offered for the first time to fully support students in this new academic environment. These support courses were offered to ensure both flexibility and "just-in-time" assistance with both prerequisite course material and current class topics in almost all levels of transfer-level math including our entire SLAM pathway and nearly our entire STEM pathway (all the way up to Calculus 3). While initial enrollments in these courses were low, much departmental-level work is being done to bolster future enrollments, including studying the possibility of requiring concurrent support for certain students instead of making it optional for everyone, as it currently is.

Although securing funding for Math Jam (Math 66/67/68/251-255) has been challenging, the department still ran two successful Math Jams before the Fall 2019 and Spring 2020 semester, respectively. We are also planning to offer a virtual Math Jam in Spring 2021.

Our department also offered SMART shops for students on a variety of study skills and math topics. We also maintain a strong alliance with the tutorial center, and work collaboratively with Jin Tsubota to ensure that they are meeting students' evolving needs. NetTutor was a real asset during our COVID-19 transition, but we are facing some challenges with its availability due to unprecedented demand. We also offered graphing calculator rentals to students, again with unprecedented demand, although the LPC library has helped us to effectively manage the COVID-19 transition. Math department sponsored scholarships continue to be offered, with three offered in total this year. The library also served as a pick-up location and allowed math emporium students to pick up handouts students would need all semester.

Several communities of practice funded by SCFF emerged, including those for Math 30, 39, 40, and 47. Elsewhere, faculty engaged in informal communities of practice, frequently engaging in productive dialogue about their classes. This became especially important during the beginning stages of the COVID-19 pandemic, when all of our instruction transformed from traditional to virtual in a matter of days. The department truly banded together to support one another and provided a multitude of dynamic and evolving resources for each other, many of them housed on the math department Canvas website. Course coordinators worked with part-time faculty to ensure that they stayed informed and felt supported during this challenging time. Our math department coordinator, Ashley McHale, also did a fantastic job keeping the department informed of changes to scheduling and staffing. Math faculty worked diligently on getting all math classes DE-approved and many faculty also participated in online training, including OCPD. The only classes that are still awaiting DE-approval are Math 40, Math 66/67/68, NMAT 261-265, and Math 107. Math 40 was also approved for OEI status, and other math courses are under development for future OEI approval.

Some new math courses that were developed include Math 27 (Number Systems for Educators) and Math 156/256 (Geometry), the latter of which was offered for the first time in Summer 2020 but ended up being canceled due to difficulties with the pandemic. Math 27 was not offered, but will be offered when the ECD program is ready for it. Math 40 was successfully added to the Math Emporium curriculum, and offered for the first time in Fall 2020. Math Emporium has been working diligently to add other STEM and SLAM courses to its curriculum, beginning with Math 30 and 39. They are also exploring the use of OER in all of their courses.

Although we applied for more reassigned time, the math coordinator was still able to retain 3 CAH. We also now have AB 705 co-coordinators, who split 1 CAH between themselves.

Although we have not been able to fill Craig Kutil's full-time faculty position since he became the articulation officer, our department of 14 full-time faculty and nearly 50 part-time faculty continues to thrive, even under the most difficult circumstances. Our part-time faculty are active across the discipline, in everything from participating in the Math Club, SLO closing the loop, Emporium curriculum development, and many other important activities.

In short, members of our department serve as campus leaders across the board, including Basic Skills, Curriculum, Distance Education, Guided Pathways, AGS, UndocuAlly, SEA, Professional Development, and Academic Senate. Everyone in the department contributes their talents, skills, and efforts equally, and we all work together to make this one of the best math departments in the region, if not the entire state.

Our college also ranked highly in the AMATYC national math exam, a competitive exam that tests students' ability to critically think and mathematically reason under time pressures.

Mark an X before each area that is addressed in your response.				Definitions of terms: <a href="https://bit.ly/2LqPxOW">https://bit.ly/2LqPxOW</a>			
	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software		LPC Planning Priorities	X	Services to Students
X	Course Offerings	X	Financial/Budgetary		LPC Collaborations	X	SLO/SAO Process
X	Curriculum Committee Items	X	Human Resources	X	Pedagogy		Student Equity
X	External Factors	X	Learning Support		Professional Development	X	Technology Use

**B. Challenges, Obstacles and Needs: Describe any significant challenges, obstacles or needs for your program. Your response may include issues regarding COVID-19. Please highlight any negative impacts for students.**

As detailed above, the Mathematics department continues to be extremely productive and successful. Despite these accomplishments, we continue to face challenges as we strive to be even better. Equity for impacted groups, especially African American and Latinx students continues to be a challenge. This is especially so during the shift to online teaching, as already impacted students often have less resources to succeed in the new format. DE classes have historically had lower success rates than in-person, and we are carefully watching what happens this year.

The price of textbooks continues to increase, putting a financial burden on students, and we are continuing to look at the possibility of (free) Open Educational Resources for our classes.

As has been the case for several years, there is a need to hire full-time faculty to keep up with the college's growth. This is exacerbated by not being able to replace faculty who have retired or moved to other roles (most recently Craig Kutil has moved to full-time articulation officer, and his position still hasn't been filled). There is also a need for instructional assistants for our concurrent support courses. We expect the demand for these to increase as more students start in higher level classes post-AB705, and as we increase advertising/awareness. Beyond the need for hiring, math faculty do an enormous amount of coordinating work – Emporium, Math Jam, and Concurrent Support are some examples – which is not being formally recognized. We believe that these coordinators deserve additional reassigned time.

A large portion of our teaching is done by part-time faculty. As we go through frequent changes, such as AB705, the addition of concurrent support, and the transition to online teaching, these faculty deserve more opportunities for professional development and to be compensated fairly for the extra time this requires. The Online Course Development Program in the spring/summer is a great example of how this can work.

When we return to campus, there is also a need for physical resources to address. AB705 has created a huge increase in the number of sections of Math 40 (Statistics), and we need adequate computer lab space to offer them. There is also a need for a designated and staffed proctoring center, so that making up exams does not become an undue burden on faculty and students.

Since the implementation of AB705, students are no longer taking Math 55 and are going into Math 30/39 and especially into Math 40. We have some concern that in the process many students are taking the shortest path to a degree and losing the opportunity to explore the STEM track as an

option. We are concerned that this may increase existent disparities in which group go into STEM fields, and are looking for ways to address this that are compatible with the goals of AB705.

The transition to online teaching, forced by the ongoing public health situation, has highlighted several needs. It also led to the cancellation of our new summer geometry class due to a lack of MOU with local districts in the current health situation, and to the cancellation of Fall 2020 Math Jam. Even when we return to campus, we will continue to offer DE classes and use online resources, so these needs are not temporary. We are losing our online proctoring software, Proctorio, in the spring. Without it, and with the inability to offer in-person exams, we lack an important tool for ensuring academic honesty. We are also losing NetTutor in the spring, which was an important resource for students even before the transition to online classes. We have the ongoing needs of technological equity, ensuring students have access to Wi-Fi, laptops, and webcams, and of having enough tablets/styluses to use for online teaching, and for professional development for DE.

Mark an X before each area that is addressed in your response.				Definitions of terms: <a href="https://bit.ly/2LqPxOW">https://bit.ly/2LqPxOW</a>			
	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software	X	LPC Planning Priorities		Services to Students
X	Course Offerings		Financial/Budgetary		LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items	X	Human Resources	X	Pedagogy	X	Student Equity
X	External Factors	X	Learning Support	X	Professional Development	X	Technology Use

**C. IR Data Review: Describe any significant trends in your program’s data from 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 generated for your program by the Office of Institutional Research and Planning.**

IR Data packets are available here: <https://bit.ly/2lYaFu7>

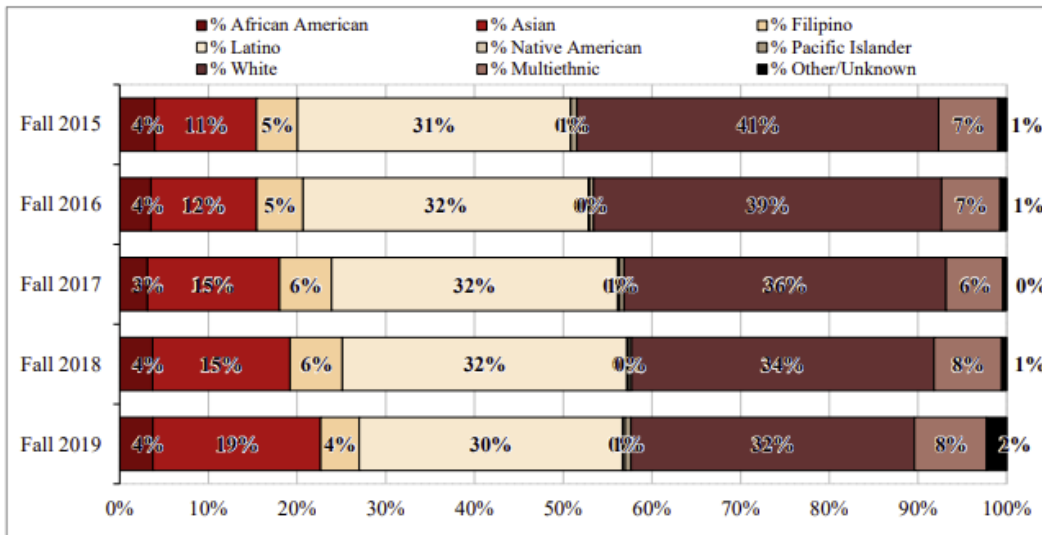
Course Success Rates Dashboard can be found at the bottom of this page: <https://bit.ly/2Y9vGpl>

For assistance with this question, contact the Director of Institutional Research and Planning. <https://bit.ly/3fY7Ead>

What follows is an analysis of equity data, breaking down course success and retention by ethnicity.

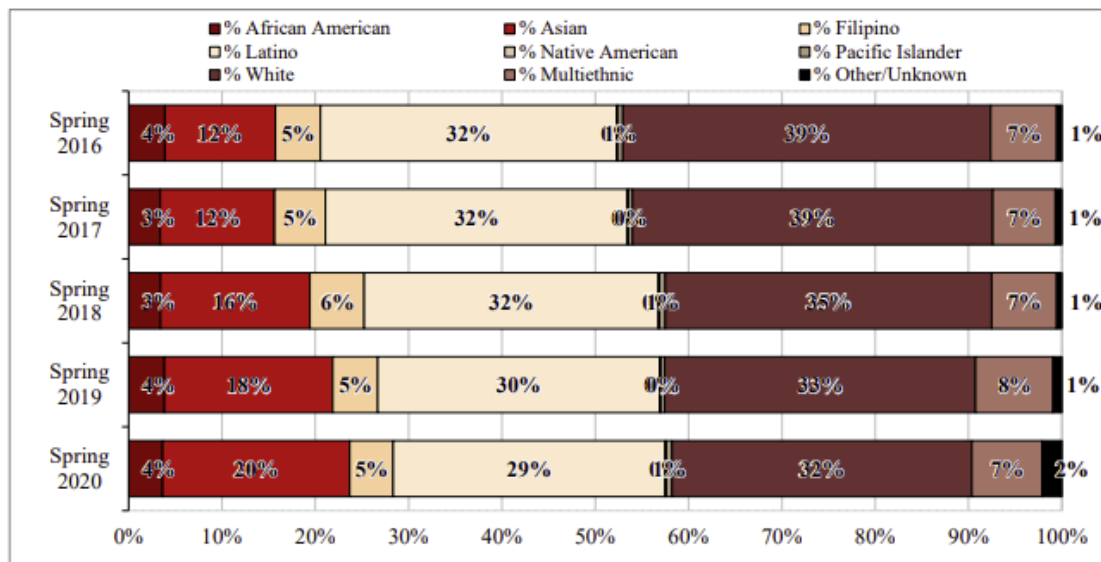
### Student Demographic: Race-Ethnicity

Mathematics ( MATH^ )					
	Term				
	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019
African American	123	112	96	111	118
Asian	357	377	458	463	597
Filipino	144	165	180	176	137
Latino	957	1,020	991	959	937
Native American	1	3	7	5	9
Pacific Islander	22	15	16	10	21
White	1,268	1,242	1,116	1,019	1,009
Multiethnic	209	210	197	228	256
Other/Unknown	30	23	13	17	72
% African American	4%	4%	3%	4%	4%
% Asian	11%	12%	15%	15%	19%
% Filipino	5%	5%	6%	6%	4%
% Latino	31%	32%	32%	32%	30%
% Native American	<1%	<1%	<1%	<1%	<1%
% Pacific Islander	1%	<1%	1%	<1%	1%
% White	41%	39%	36%	34%	32%
% Multiethnic	7%	7%	6%	8%	8%
% Other/Unknown	1%	1%	<1%	1%	2%



### Student Demographic: Race-Ethnicity

Mathematics ( MATH^ )					
	Term				
	Spring 2016	Spring 2017	Spring 2018	Spring 2019	Spring 2020
African American	119	102	102	97	88
Asian	364	371	479	456	487
Filipino	148	164	173	122	113
Latino	976	978	942	764	707
Native American	2	3	4	3	3
Pacific Islander	17	14	19	11	15
White	1,211	1,166	1,045	842	780
Multiethnic	217	203	208	210	182
Other/Unknown	17	21	17	24	52
% African American	4%	3%	3%	4%	4%
% Asian	12%	12%	16%	18%	20%
% Filipino	5%	5%	6%	5%	5%
% Latino	32%	32%	32%	30%	29%
% Native American	<1%	<1%	<1%	<1%	<1%
% Pacific Islander	1%	<1%	1%	<1%	1%
% White	39%	39%	35%	33%	32%
% Multiethnic	7%	7%	7%	8%	7%
% Other/Unknown	1%	1%	1%	1%	2%



In terms of our student demographics in the mathematics program, we have seen a steady increase in our Asian population while consistently serving a proportionally low number of African American students during the Fall 2016 - Fall 2019 and Spring 2016 - Spring 2019 enrollment periods. All other ethnicities have been evenly represented, without any major shifts during these time periods. Nearly 30% of our mathematics students identify as being Latino, and that population has held pretty steady during the past four years. We believe that the Latino population benefited from the HSI grant, the



Puente Project, and other Hispanic-targeted programs, but more needs to be done in terms of outreach to the African American population.

Clearly, the African American student population is disproportionately impacted by our mathematics curriculum, especially when considering student success and retention data. For instance, take a look at the following sequence (Math 55 -> Math 40) from Fall 2018 to Summer 2020.

Course Sequence Data

**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
<b>Total Students</b>		<b>196</b>	<b>52%</b>	<b>101</b>	<b>27%</b>	<b>82</b>	<b>22%</b>	<b>379</b>

**COURSE SEQUENCE RESULTS: Outcomes in MATH 40 (by Summer 20) of Students Successfully 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%
<b>Total Students</b>		<b>41%</b>	<b>85%</b>	<b>18%</b>

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

African-American students are clearly less successful than other groups, something the department observes all across the board. The throughput for them is only 9% compared to the double-digit throughputs from other ethnicities. Their success rate in Math 55 was only 18%, but for the one student who went on to take Math 40, they were indeed successful. Interestingly, the Latino population outperformed Whites and Asian Americans in terms of throughput. While it is impossible to isolate any



single variable to explain the steady success rate improvements for Latino students, one can certainly place likely credit with the outcomes of the HSI grant and related projects.

Please see the course sequence data below for Math 55 -> Math 38 or 39 from Fall 2018 -> Summer 2020.

**Las Positas College**  
**Sequence: MATH 55 → MATH 38 or 39**  
**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
<b>Total Students</b>		<b>196</b>	<b>52%</b>	<b>101</b>	<b>27%</b>	<b>82</b>	<b>22%</b>	<b>379</b>

**COURSE SEQUENCE RESULTS: Outcomes in MATH 38 or 39 (by Summer 20) of Students Successfully Completing MATH 55 in Fall 2018**

Of 196 succeeding in MATH 55:		by Summer 20		Throughput** MATH 55 to MATH 38 or 39
MATH 38 or 39		Enrolled in MATH 38 or 39	Success Rates in MATH 38 or 39	
Gender	Female	31%	79%	14%
	Male	40%	70%	14%
Race-Ethnicity	African American	450%	78%	64%
	Asian American	0%	-	0%
	Filipino	69%	22%	12%
	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%
<b>Total Students</b>		<b>36%</b>	<b>74%</b>	<b>14%</b>

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

\*\*Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 38 or 39.

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

The data for African-American student throughput may be erroneous (450% is not accurate), so it cannot be properly analyzed. Asian Americans strikingly had 0% enrollment in 38/39 despite 47% success rates in Math 55. Filipino students had the highest enrollment at 69%, but they experienced a steep drop-off in success rates at only 22%. All other ethnic groups experienced tremendous success rates, but very low throughputs. It will be a few years before we can really understand the effects that

the AB 705 implementation had on throughput since Math 55 is no longer a prerequisite to this course sequence. In addition, Math 30 could be another course drawing students away from Math 39, though students can take 30 and 39 in any order or concurrently.

Some of the most striking data can be seen in the Math 55 -> Math 1 three-year course sequence, consisting of 180 total students (see below):

**Sequence: MATH 55 → MATH 1  
Timeframe: Fall 2017 → Summer 20**

**STARTING COHORT: Fall 2017 MATH 55 Success Rates by Demographic**

MATH 55		Fall 2017						
		Success		Non-success		Withdrawal		Total
Gender	Female	88	46%	48	25%	54	28%	190
	Male	89	42%	73	35%	49	23%	211
Race-Ethnicity	African American	3	30%	6	60%	1	10%	10
	Asian American	23	47%	18	37%	8	16%	49
	Filipino	13	59%	4	18%	5	23%	22
	Latino	62	42%	40	27%	44	30%	146
	White	60	41%	46	31%	41	28%	147
	Multi-Ethnic	17	59%	6	21%	6	21%	29
Age	24 or younger	150	45%	101	30%	84	25%	335
	25 or older	30	42%	21	29%	21	29%	72
Disability	Any Disability	15	41%	8	22%	14	38%	37
	No Disability	165	45%	114	31%	91	25%	370
Full Time/ Part Time	Full Time (12+ units)	121	51%	71	30%	46	19%	238
	Part Time (6-11.5 units)	48	35%	44	32%	44	32%	136
	Part Time (0-5.5 units)	11	33%	7	21%	15	45%	33
<b>Total Students</b>		<b>180</b>	<b>44%</b>	<b>122</b>	<b>30%</b>	<b>105</b>	<b>26%</b>	<b>407</b>

**COURSE SEQUENCE RESULTS: Outcomes in MATH 1 (by Summer 20) of Students Successfully Completing MATH 55 in Fall 2017**

Of 180 succeeding in MATH 55:		by Summer 20		Throughput** MATH 55 to MATH 1
MATH 1		Enrolled in MATH 1	Success Rates in MATH 1	
Gender	Female	18%	75%	6%
	Male	11%	70%	3%
Race-Ethnicity	African American	0%	-	0%
	Asian American	26%	83%	10%
	Filipino	15%	100%	9%
	Latino	11%	57%	3%
	White	12%	71%	3%
	Multi-Ethnic	24%	75%	10%
Age	24 or younger	16%	75%	5%
	25 or older	7%	50%	1%
Disability	Any Disability	7%	100%	3%
	No Disability	15%	72%	5%
Full Time/ Part Time	Full Time (12+ units)	18%	73%	7%
	Part Time (6-11.5 units)	8%	75%	2%
	Part Time (0-5.5 units)	0%	-	0%
<b>Total Students</b>		<b>14%</b>	<b>73%</b>	<b>5%</b>

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

\*\*Throughput is the percent of students enrolled in MATH 55 who succeeded in MATH 1.

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

Of the 10 African American students who attempted Math 55 in this cohort, only 3 students succeeded, and of those who did, 0% enrolled in Math 1 in this three-year period. Of similar concern, the throughput for Latino and White students was only a combined 6% (split at 3% each). The success

rates for Math 1 were the lowest amongst the Latino students (at 57%), still indicating disproportionate impact, but still within the range of the program-set standard.

Now consider the Course Sequence Data from Fall 2018 - Summer 2020 for Math 1 -> Math 2:

**Course Sequence Data**

**Las Positas College**  
**Sequence: MATH 1 → MATH 2**  
**Timeframe: Fall 2018 → Summer 20**

**STARTING COHORT: Fall 2018 MATH 1 Success Rates by Demographic**

MATH 1		Fall 2018						
		Success		Non-success		Withdrawal		Total
Gender	Female	60	68%	10	11%	18	20%	88
	Male	79	71%	18	16%	15	13%	
Race-Ethnicity	African American	*		*		*		*
	Asian American	39	78%	7	14%	4	8%	50
	Filipino	11	55%	4	20%	5	25%	20
	Latino	26	55%	7	15%	14	30%	47
	White	41	72%	6	11%	10	18%	57
	Multi-Ethnic	18	75%	4	17%	2	8%	24
Age	24 or younger	131	72%	24	13%	28	15%	183
	25 or older	10	48%	4	19%	7	33%	21
Disability	Any Disability	11	69%	2	13%	3	19%	16
	No Disability	130	69%	26	14%	32	17%	188
Full Time/ Part Time	Full Time (12+ units)	103	71%	19	13%	24	16%	146
	Part Time (6-11.5 units)	34	69%	6	12%	9	18%	49
	Part Time (0-5.5 units)	*		*		*		*
<b>Total Students</b>		<b>141</b>	<b>69%</b>	<b>28</b>	<b>14%</b>	<b>35</b>	<b>17%</b>	<b>204</b>

**COURSE SEQUENCE RESULTS: Outcomes in MATH 2 (by Summer 20) of Students Successfully Completing MATH 1 in Fall 2018**

Of 141 succeeding in MATH 1:		by Summer 20		Throughput** MATH 1 to MATH 2
MATH 2		Enrolled in MATH 2	Success Rates in MATH 2	
Gender	Female	70%	90%	43%
	Male	80%	86%	48%
Race-Ethnicity	African American	*	*	*
	Asian American	82%	84%	54%
	Filipino	73%	63%	25%
	Latino	81%	95%	43%
	White	71%	86%	44%
	Multi-Ethnic	67%	92%	46%
Age	24 or younger	77%	86%	48%
	25 or older	60%	100%	29%
Disability	Any Disability	55%	83%	31%
	No Disability	78%	87%	47%
Full Time/ Part Time	Full Time (12+ units)	79%	86%	48%
	Part Time (6-11.5 units)	71%	92%	45%
	Part Time (0-5.5 units)	*	*	*
<b>Total Students</b>		<b>76%</b>	<b>87%</b>	<b>46%</b>

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

There is clearly a major improvement in course success rates and throughput across the board for all ethnic groups compared to the earlier data from BSTEM and SLAM entry-level transfer course sequences. This does not come as much of a surprise, however, as students at this level are typically better academically prepared than their counterparts at the lower levels. Still, the Filipino and Latino success rates in Fall 2018 (for Math 1) were lower than their counterparts (consistent with the earlier

data from Fall 2017). Nonetheless, of those who succeeded in Math 1, every ethnic group did remarkably well with success at Math 2, although the Filipino students' success rate was 63% with only 25% throughput, significantly lower than the other groups.

Our overall impressions from this data show that African-American students are disproportionately impacted when it comes to all levels of Math, and even though they only represent 4-5% of our entire student body in mathematics (a curiosity in itself), they appear to have fewer opportunities and supports to succeed, overall. It is very alarming that no students in the 2017-2020 55->1 cohort enrolled in Math 1. There is already growing concern in the department about students not selecting BSTEM pathways, but the fact that we have zero African-American students enrolled in transfer-level Calculus needs to be addressed. Filipino and Asian-American students also need additional supports and it is clear that Latino students are improving all across the board, an encouraging sign. Hopefully, our department and college can do more to reach out to African-American students in a meaningful way to draw them into our program and encourage them to pursue BSTEM pathways, while providing them with the tools and resources to succeed. We can only imagine that the effects of the COVID-19 pandemic will also create ripple effects for future data to come because these effects are usually experienced more dramatically by disproportionately impacted ethnic groups.

We would like to consider having two Punte/Umoja cohorts each year - one for SLAM and one for BSTEM. Since students can all start transfer-level, they could all take a Math 40 or a Math 30 while they have the supports and as a cohort. This is something we will be looking into in the next year.

Looking at how enrollments and success rates have changed in Math 40 due to AB 705, you can see a very large increase in students attempting Math 40, roughly 44% or 266 more students than the previous fall semester. Just looking at the additional 266 students, they would account for an additional 120 success, 89 non-success, and 57 withdraws :

### MATH^ Course Success Rates: Course-Level Detail (\*\*Fall Only\*\*)

		Reference Data										Evaluation Y..	
		Fall 2014		Fall 2015		Fall 2016		Fall 2017		Fall 2018		Fall 2019	
		Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.	Num	Pct.
MATH 40	Overall Success	307	53%	269	51%	335	59%	300	58%	376	62%	496	57%
	Non-success	104	18%	76	14%	74	13%	82	16%	81	13%	170	19%
	Withdrawal	163	28%	184	35%	158	28%	134	26%	153	25%	210	24%
	<b>Total</b>	<b>574</b>	<b>100%</b>	<b>529</b>	<b>100%</b>	<b>567</b>	<b>100%</b>	<b>516</b>	<b>100%</b>	<b>610</b>	<b>100%</b>	<b>876</b>	<b>100%</b>

This additional group of students, theoretically due to AB705, had a success rate of 45%, non-success of 33%, and Withdraw rate of 21%. It is interesting that they have a higher fail rate, which may be due to them being less "savvy" as students and are unaware of the W option or perhaps they are embracing the idea of failing in the fall to succeed in the spring so staying in the class during the fall semester so they can learn as much as possible. Also, this would indicate that we need about 8 more sections of statistics.

Mark an X before each area that is addressed in your response.				Definitions of terms: <a href="https://bit.ly/2LqPxOW">https://bit.ly/2LqPxOW</a>			
	Community Partnerships/Outreach		Facilities, Supplies and Equipment, Software	X	LPC Planning Priorities	X	Services to Students
X	Course Offerings		Financial/Budgetary		LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items		Human Resources	X	Pedagogy	X	Student Equity
X	External Factors	X	Learning Support		Professional Development		Technology Use

**D. Short Term Planning: What are your most important plans, either new or continuing, for next year? Describe plans starting now and continuing through AY 21-22. (Optional: You may also describe long-term plans if desired.)**

Our most important plans this year are directed towards mitigating the impacts of the COVID-19 pandemic and AB 705 on our students. Both of these events have affected our success rates, enrollment numbers and teaching practices. We are therefore renewing our commitment to persistence, retention, and communication with our students through a number of projects and initiatives.

At this point, the department is currently planning to offer all courses online in the Spring, 2021, semester, with rooms reserved just in case current events cause a shift back to campus. Classes will be offered in a variety of modes, including synchronous, asynchronous, and a hybrid of the two, to enable students to choose the best mode for their learning style.

We will be offering Math 27, Number Systems for Educators, in the near future to support the ECE program's Elementary Teacher Education AA.T Degree.

Over the past several years, the math department has added a large number of new support and technical math courses to its curriculum. Recently, we have noticed that several of these offerings have had little to no enrollment and others have become less necessary due to AB 705. There is also a need to simplify our course schedule to make it easier for students to decide which classes to take, so this year we are considering whether any courses should be deactivated.

Many of our classes designed to assist students with prerequisite material for their math classes, such as Math Jam and Concurrent Support, will be offered online and with fewer sections in the spring. As the college transitions away from NetTutor and into college-run tutorial programs, we expect that more students will take advantage of our open-entry, open-exit, NMAT 202C, which runs at the same time as Concurrent Support. High school students will continue to have access to tutorial services via NMAT 202C as well.

The SCFF-sponsored communities of practice have so far included 24 math faculty. Instructors meet regularly, discussing best practices in the online teaching format, and committing to make adjustments in their teaching to increase retention numbers. These include an equity-minded syllabus, growth-mindset grading procedures, and building community in their classes. These communities of practice are expected to continue through the Spring, 2022, semester.

In addition, we are collaborating with the Tutorial Center in another component of our SCFF project to contact students directly. Tutors call students who either withdrew from or were not successful in their math classes, informing them of support resources available to them and encouraging them to try again the following semester.

Our Emporium mode courses, traditionally only pretransfer level, will be transitioned to using open educational resources (OER). As these courses are no longer required by the state in order for students to take transfer level courses, we would like to make them as accessible as possible for students who would like to shore up their foundations in math before proceeding to the transfer level. Fall 2020, we added Statistics to the Emporium mode and we hope to add a couple more transfer level courses as well by Fall 21 or Spring 22. For a number of reasons, including equity, we felt it was time to offer these courses in this mode. These transfer level courses will also be designed to use Open Educational Resources as well. Our instructional assistants are crucial to completing these plans, so we are grateful to have them all.

As Emporium moves into OER, we also plan to transition the traditional mode courses (lecture, online, hybrid) into OER content. The department has been requiring the use of the same textbook by all

sections of a course, and we want to continue this practice as much as we can. So we are working hard to make sure the content we ultimately choose/create will satisfy instructors' preference for both online and traditional homework.

Mark an X before each area that is addressed in your response.

Definitions of terms: <https://bit.ly/2LqPxOW>

<b>X</b>	Community Partnerships/Outreach		Facilities, Supplies and Equipment, Software	<b>X</b>	LPC Planning Priorities	<b>X</b>	Services to Students
<b>X</b>	Course Offerings		Financial/Budgetary	<b>X</b>	LPC Collaborations		SLO/SAO Process
<b>X</b>	Curriculum Committee Items		Human Resources	<b>X</b>	Pedagogy	<b>X</b>	Student Equity
<b>X</b>	External Factors	<b>X</b>	Learning Support	<b>X</b>	Professional Development	<b>X</b>	Technology Use



## Section Two: Institutional Planning Topics (Required for All Programs)

**A. Equity [Student Equity and Achievement Committee]: Please describe any recent actions your program has taken to increase equity and/or any challenges your program faces in promoting equity and equity-based decision-making? Areas to consider include students impacted by race/ethnicity, gender, sexuality, age, or disability status, as well as students who are disproportionately impacted due to the shift to remote instruction.**

For assistance with this question, contact the Director of Student Equity and Achievement. [<https://bit.ly/3fY7Ead>]

Math 40: Statistics and Probability to students using free-open source materials and efforts to do the same by Spring 2021 in College Algebra and Trigonometry.

Many of us have elected to have our Institutional Research Office run data on our own personal success rates, broken up by race and disproportionately impacted groups. With the public health crisis, the Black Lives Matter movement and economic recession, we understand the stress students are under and the need for academic and holistic supports. Our efforts to meet the needs of all students is a work in progress, and one we look forward to continuing.

The Math Department, in collaboration with the Tutorial Center, was also granted a SCFF Project to focus on inreach to students in Mathematics and professional development of our first-transfer level math faculty as part of our AB 705 success efforts. The primary goal of the project was to maximize student retention, in math classes specifically, but also the college as a whole. This project came about after attending conferences about impacts of AB 705, where students can self-select into first transfer-level classes and the impact of not passing a math class can have on a student's academic career. Concerned with disproportionate impact on our students and the desire to get ahead of any additional impact, we asked IR to run our own LPC data. LPC data showed that in the 2017-2018 academic year, 65.4% of students who either withdrew from or failed their math class did not take a math class the following semester and 29.8% did not take any class the following semester. As a Department, we believe that every student should be given the supports they need to be successful and knew we had to do something.

In an effort to maximize student retention, we applied for and were granted a SCFF Project. The components of the Project are twofold: call Campaign reaching out to students unsuccessful in their math classes and to start communities of Practice for math instructors teaching first transfer-level courses. We started the inreach call campaign in December 2019, before the SCFF project funds were even available and have done it every semester since. "Most students seemed very grateful that we were reaching out because they **felt like we really listened to them and their needs**. I think talking to an equal - another student - about their concerns made them **more comfortable to share while still feeling** assured that their concerns will be heard by the administration. - Student Tutor

While our inreach results to students was dampened by the covid-19 pandemic which hit us hard in the Spring 2020, we believe strongly in this project. An inreach tutor making the calls reported "When asking the students about specific reasons for dropping their math course the answers most of the time were either "**I dropped it because of COVID** and the sudden online shift" or because "**I felt I was unprepared for the class** and that I need to sharpen my math skills before taking this course."



In response to the need for more professional development, Communities of Practice started virtually in the Spring 2020 as we sheltered in place. Many of the communities focused on how to create a supportive learning community on Zoom and how to assess in an online environment. This Fall 2020 CoPs will focus on how to build authentic relationships with students and students with each other, how to provide early assessments with growth mindset feedback, provide frequent and encouraging communication, developing equity-minded syllabi and growth mindset grading opportunities for students without reducing the rigor of the material.

## **B. SLOs/SAOs [SLO Committee]:**

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

B1: Instructional Programs with PSLOs

B2: Instructional Programs without PSLOs or with Special Circumstances

B3: Non-Instructional Programs

Skip 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.

### **B1: Instructional Programs with PSLOs**

In this year's Program Review, and in support of Accreditation, we would like a snap-shot on how your program plans to collect, discuss and report assessment findings to develop best practices for teaching and student learning ("closing the loop").

As a program, please select one PSLO for a degree or certificate to focus on. This PSLO should reflect one area of your program that you would like to investigate in depth. For example, your selection may focus on an area to improve student success, to update pedagogy, equity issues, or to examine a new degree/certificate, etc.

In this section, describe your plan for assessment data to be collected, analyzed and discussed, and reported out in next year's Program Review. Your plan should identify the CSLOs that feed into your selected PSLO so that a complete data set is collected. You may choose to do this over one or two semesters. In next year's Program Review, you will be asked to summarize your SLO assessments, analysis of those findings, and proposed changes that may be implemented to improve teaching and student learning.

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

**B1a. In the space below, insert the complete wording of the PSLO and potential reason(s) for selecting it for analysis.**

PSLO: Upon completion of the Mathematics AS-T, students are able to learn mathematics through modeling real-world situations.

Rationale: We would like to look at how students are succeeding in this key outcome that be applied to any number of STEM careers. We will collect two semesters worth of data as seeing the difference between Fall and Spring semesters can be enlightening. Based on the data presented in section 1C, we also want to start disaggregating the data by ethnicity for a closer look at the topics in the courses that may be preventing students from succeeding.

**B1b. In the table below, list the CSLOs that feed up to the identified PSLO and check the semester or semester(s) that the CSLO will be assessed and data entered into eLumen.**

(If this different than the submitted SLO template plan, please update and resubmit the template plan. Send the updated template to [mwiest@laspositascollege.edu](mailto:mwiest@laspositascollege.edu) and [ahight@laspositascollege.edu](mailto:ahight@laspositascollege.edu) )

Complete Name of CSLO	Fall 2020	Spring 2021	Summer 2021
Upon completion of Math 1, a student should be able to construct an optimization model and use it to find the desired quantity.	X	X	
Upon completion of Math 2, a student should be able to determine an arc length using parametric equations.	X	X	
Upon completion of Math 3, a student should be able to solve optimization problems by using the method of LaGrange multipliers.	X	X	
Upon completion of Math 5, a student should be able to construct and interpret the solution of a mass-spring system.	X	X	
Upon completion of Math 3, a student should be able to solve optimization problems by using the method of LaGrange multipliers.	X	X	
Upon completion of Math 7, a student should be able to set up a system of linear equations to represent a network and then solve the system.			
Upon completion of Math 40, a student should be able to determine whether or not there is significant correlation for a bivariate data set, and if so, fit a linear regression equation and use it for data prediction.	X	X	

**B1c. When will analysis and discussion of the assessment data be completed (during next year's Program Review is an option)? The reporting out of the "closing the loop" analysis will be part of next year's Program Review.**

The department tries to have a “closing the loop” meet every Fall semester to reflect and review the information gathered from the previous academic year. This information is then compiled and shared out on Program Review as requested, as well as with the department in a separate email.

**B2: Instructional Programs without PSLOs or with Special Circumstances**

If your department does not have PSLOs, you may choose one CSLO to focus on. This option may also be used if there is a strong departmental rationale for focusing on a single CSLO.

As a department, please select a course to focus on. The selected course and one of its CSLOs should reflect an area that you would like to investigate in depth. For example, your selection may focus on a course to improve student success, to update pedagogy, to analyze equity issues, etc.

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

**B2a. In the space below, describe the rationale (such as this is not a degree-granting program, we focus mainly on non-degree courses, etc.)**

**B2b. In the space below, insert the complete wording of the CSLO and reason(s) for selecting it for analysis.**

**B2c. In the table below, list the CSLO and check the semester or semester(s) that the CSLO will be assessed and data entered into eLumen.**  
(If this is different than the submitted SLO template plan, please update and resubmit the template plan. Send the updated template to [mwiest@laspositascollege.edu](mailto:mwiest@laspositascollege.edu) and [ahight@laspositascollege.edu](mailto:ahight@laspositascollege.edu) )

Complete Name of CSLO	Fall 2020	Spring 2021	Summer 2021

**B2d. When will analysis and discussion of the assessment data be completed? (During next year's Program Review is an option.) The reporting out of the "closing the loop" analysis will be part of next year's Program Review.**

**B3: Non-Instructional Programs**

***In this year's Program Review, and in support of Accreditation, we would like a snap-shot of how your student service area plans to collect, discuss, and report assessment findings to develop best practices for teaching and student learning ("closing the loop").***

Please select one SAO to focus on. This SAO should reflect an area of your program that you would like to investigate in depth. For example, your selection may focus on an area to improve student success, increase best practices, to address equity issues, or to examine a new service/program, etc. The intent is for this section to be useful for reflection to develop best practices for serving students.

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

**B3a. In the space below, insert the complete wording of the SAO and potential reason(s) for selecting it for analysis.**

**B3b. When and how will this SAO be assessed and data entered into eLumen? (If this different than the submitted template plan, please update and resubmit the template plan. Send the updated template to [mwiest@laspositascollege.edu](mailto:mwiest@laspositascollege.edu) and [ahight@laspositascollege.edu](mailto:ahight@laspositascollege.edu) )**

**B3c. When will analysis of the assessment data will be completed (during next year's Program Review is an option)? The reporting out of the "closing the loop" analysis will be part of next year's Program Review.**



### 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).

Math 3 (Multivariable Calculus), Math 7 (Elementary Linear Algebra)

**B. Degree/Certificate Updates [Curriculum Committee]:** Are there any programs requiring modification? List needed changes below.

None-- all are up to date

**C. DE Courses/Degrees/Certificates [Distance Education Committee]:** Detail your department's plans, if any, for adding DE courses, degrees, and/or certificates. For new DE degrees and/or certificates (those offered completely online), please include a brief rationale as to why the degree/certificate will be offered online.

DE course offerings have steadily increased within our Math department. All course outlines have been updated to include the option of teaching a Distance Education version of each Math course. Several of our Math faculty have completed the OCDP (Online Course Development Program) training offered through the Teaching and Learning Center. We have recently included our Statistics course (Math 40) into our Emporium model in a hybrid/DE format. We also have faculty incorporating OER (Open Educational Resources) material into their courses. Finally, with LPC being an official OEI Consortium college, we need to increase the number of OEI certified math courses. Currently our Math 40 course is OEI certified and our faculty are working on getting more courses OEI certified, including Math 55.

