

## Section Two: Current Topics (Required for All Programs)

**A. 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:

<http://www.laspositacollege.edu/research/outcomes.php>

(Data for AY 18-19 will be available by the beginning of Fall 2019).

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

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

**B. SLOs/SAOs:** Describe an example of how your program used course SLO data (SLOs) or SAO data from last year (2018-19) to impact student learning, access, achievement, or other services to students. (Copy the box below if you would like to discuss multiple examples).

Course (SLOs only): Math 5 - Ordinary Differential Equations
SLO or SAO: Upon completion of Math 5, a student should be able to use a 4th order Runge-Kutta algorithm to solve an equation numerically.
Describe the quantitative or qualitative results: The overall trend based on the data is that the majority of the students have an above average to mastery level knowledge of the SLO topics.
Discuss any actions taken so far (and results, if known): The actions taken so far have been to use technological collaborative labs for Runge-Kutta and traditional book homework and lecture techniques for the others.
Discuss your action plan for the future: Based on instructor reflections, more labs should be developed. A large majority of students have performed very well on the Runge-Kutta SLO for years. It is recommended to keep all of our current SLO's for Math 5 except for the technology based Runge-Kutta one. The next technology SLO used for Math 5 should be one connected to one of the new labs that instructors wish to develop.

Course (SLOs only): Math 1- Calculus I
<b>SLO or SAO: Upon completion of Math 1, a student should be able to find the volume of a solid of revolution using washers or shells.</b>
Describe the quantitative or qualitative results: Slightly more students achieve mastery level of understanding of Volume of Solids in the fall (28.40%) than in the spring (23.71%). Almost 12% more students achieve average and above average in the spring than those in fall.
Discuss any actions taken so far (and results, if known): Volume of Solids: One instructor indicated that an additional day was taken to introduce volume of solids - a day on disks and a day on washers - with notable success.
Discuss your action plan for the future: Volume of Solids: Many instructors expressed wanting to take more time to cover the topic. Perhaps, adjusting pacing to allow for a second day and/or time to assess the SLO once before the final exam. It was also noted that It seems that many instructors are searching for an ideal tool for visualization (via technology or other). It is incredibly valuable to invest time into instruction of this SLO as Math 2 picks up exactly where Math 1 leaves off.  A common theme that was noted for most SLOs that centered on topics that are covered at the end of the semester was that students did not perform well on them. It was noted that this could be due to many reasons, first among them though was needing to rush through material at the end of the semester to make sure all of the topics are covered.

Course (SLOs only): Math 39 - Trigonometry
<b>SLO or SAO: Upon completion of Math 39, a student should be able to solve a trigonometric equation that does not involve any of the standard angles as solutions, making usage of a calculator necessary.</b>
Describe the quantitative or qualitative results: Significant decrease in achievement from fall to spring, with above average percentages halved from fall to spring and below average percentages doubled.
Discuss any actions taken so far (and results, if known): Calculator problems were generally relegated to Lab assignments, with not a lot of time spent during class.

Discuss your action plan for the future:

Several expressions of surprise that students were unable to use calculators correctly; suggestions to spend more time in class demonstrating calculator usage.

It was noted that this SLO is definitely important, especially as technology is becoming more and more integrated into every occupation. Even though the specific tool (a calculator) won't necessarily be needed, gaining familiarity with and comfort using technological devices is a transferable out-of-the-classroom skill.

Having class sets of calculators so all students could see a demo of usage on the particular device they are using would be ideal. The library does have a class set (I believe), but one is one set for several instructors to share.

For the technology SLO one faculty member noted that he was struck by how often the reflections indicated that the instructor gave a handout or a lab but didn't model the tech usage in class to students and wondered if perhaps faculty need more training (professional development) in this area? Especially in light of comments during the meeting about graphing calculator usage being such a struggle.

Course (SLOs only): Math 40 - Statistics and Probability

SLO or SAO:

**Upon completion of Math 40, a student should be able to build a frequency distribution for, and make a histogram of, quantitative data.**

**Upon completion of Math 40, a student should be able to use a computer program to make a graph of categorical data.**

Describe the quantitative or qualitative results:

There was an increase in "Above Average" and a decrease in "Average" from fall 2018 to spring 2019. It was suspected that because this SLO is measuring a topic closer to the beginning of the course that students tend to find easier, there may be at least some students that show up in both semesters in the data. Some may have failed the first time, with their grades dropping off once the class hit hypothesis testing. They may have improved their understanding of frequency distributions from one semester to the next.

Discuss any actions taken so far (and results, if known):

Reflections for these SLOs noted that there seems to be a lot of variety in what instructors would like to do, in order to help students learn the material. Some use handouts, and help to reinforce the topics more on quizzes and exams. Many of the instructors are using different forms of technology (i.e. TI-83/84, Excel, Stat Crunch, Smart Shop Series etc.). Many instructors noted that students actively worked on it in class, in addition to it showing up on a quiz, exam, or final. Some instructors also noted that the frequency distributions and histograms were constructed both by hand, and by using technology like a graphing calculator.

Discuss your action plan for the future:

Most instructors are satisfied with how they introduce and teach these topics. However, during our department discussion it was noted that this SLO is measuring a very specific topic that is used in a wide variety of fields, so it is important, however, it is also a topic that many students are already very familiar with from their previous educational experience. It was felt that it may not fully reflect the level of statistical knowledge that they learn in this course. At the very least, it was felt that having SLOs measuring two topics from the same chapter seems in appropriate for understanding how students are doing in this course. This may be something that leads to an SLO revision or two for this course, especially since there are other technology based topics that students should be comfortable working with and should be being assessed.

Course (SLOs only): Math 50 - Intermediate Algebra for SLAM

SLO or SAO:

**Upon completion of Math 50, a student should be able to given a data set, use technology to graph a scatter plot of the data and find the line of best fit (linear regression).**

Describe the quantitative or qualitative results:

Tech: spring to spring - mastery+above average+average went down from 86% to 73%;

Discuss any actions taken so far (and results, if known):

It was noted that a few instructors were using summation for least squares regression. This is not appropriate for this class level; should have used technology only.

Discuss your action plan for the future:

Instructors noted that the lesson was at the end of the term and covered "too quickly" - concerns that students didn't have enough time to understand.

It was noted that technology should include Excel and we should encourage M50 instructors to try to use Excel for this class/SLO. It is felt that graphing calculators are cumbersome to teach in class, and one instructor noted that if a student is afraid to ask questions about its use, then it is no better than a paper weight. This topic should not be on a final exam, but as a lab or in-class assignment instead (one is already written for this very topic).

**C. Program SLOs (Degree/Certificate granting programs only):** Describe an example of how your program used program-level SLO data (PSLOs) from last year (2018-19) to impact student learning or achievement. (Copy the box below if you would like to discuss multiple examples).

Degree/Certificate: We have not started reviewing PSLO data for Math AS-T.

Program SLO:

Describe the quantitative or qualitative results:

Discuss any actions taken so far (and results, if known):