

Institutional Program Review—2018-2019
Program Efficacy Phase: Instruction
DUE: Monday, March 18, 2019 by NOON

Purpose of Institutional Program Review: Welcome to the Program Efficacy phase of the San Bernardino Valley College Program Review process. Program Review is a systematic process for evaluating programs and services annually. The major goal of the Program Review Committee is to evaluate the effectiveness of programs and to make informed decisions about budget and other campus priorities.

For regular programmatic assessment on campus, the Program Review Committee examines and evaluates the resource needs and effectiveness of all instructional and service areas. These review processes occur on one-, two-, and four-year cycles as determined by the District, College, and other regulatory agencies. Program review is conducted by authorization of the SBVC Academic Senate.

The purpose of Program Review is to:

- Provide a full examination of how effectively programs and services are meeting departmental, divisional, and institutional goals
- Aid in short-range planning and decision-making
- Improve performance, services, and programs
- Contribute to long-range planning
- Contribute information and recommendations to other college processes, as appropriate
- Serve as the campus' conduit for decision-making by forwarding information to appropriate committees

Our Program Review process includes an annual campus-wide needs assessment each fall and an in-depth efficacy review of each program on a four-year cycle. All programs are now required to update their Educational Master Plan (EMP) narrative each fall. In addition, CTE programs have a mid-cycle update (2 years after full efficacy) in order to comply with Title 5 regulations.

Committee members are available to meet with you to carefully review and discuss your Program Efficacy document. You will receive detailed feedback regarding the degree to which your program is perceived to meet institutional goals. The rubric that the team will use to evaluate your program is embedded in the form. As you are writing your program evaluation, feel free to contact the efficacy team assigned to review your document or your division representatives for feedback and input.

Draft forms should be written early so that your review team can work with you at the **small-group workshops:**
Friday, February 22 from 9:30 to 11:00 a.m. in NH-222
Friday, March 1 from 9:30 to 11:00 a.m. in B-204

Final documents are due to the Committee co-chairs (Paula Ferri-Milligan at pferri@sbccd.cc.ca.us and Wallace Johnson at wjohnson@sbccd.cc.ca.us) by **NOON on Monday, March 18, 2019.**

SUBMISSION FORMAT:

- 1) Use this current efficacy form and attach as a MICROSOFT WORD DOCUMENT (do NOT convert to PDF)**
- 2) Do NOT change the file name**

It is the writer's responsibility to be sure the Committee receives the forms on time.

The efficacy process now incorporates the EMP sheet and SLO/SAO documentation, which you will need to insert. We have inserted the dialogue from the committee where your last efficacy document did not meet the rubric, the curriculum report (if applicable), and the SBVC demographic data. **If you have questions regarding the SBVC demographic data, contact Christie Gabriel, Research Analyst, at cgabriel@sbccd.cc.ca.us by February 25. If you have additional data requests, those requests must be submitted to Christie Gabriel by February 8.** Following is the link to Program Review Efficacy Resources, which will be useful as you complete your efficacy report:

<https://www.valleycollege.edu/about-sbvc/campus-committees/academic-senate/program-review/17-efficacy.php>

**Program Efficacy
2018 – 2019**

Program Being Evaluated

Math

Name of Division

Mathematics, Business, and Computer Technology

Name of Person Preparing this Report

Vicente Alvarez

Extension

x8266

Names of Department Members Consulted

Vicente Alvarez; Victoria Anemelu; Yvonne Beebe; Lori Ann Blecka; Anthony Castro; Moustafa Kanawaiti, Abeir Israel; Kieth Lee; David Martin; Michael Mayne; David Smith; Teri Strong, Bethany Tasaka

Names of Reviewers

Christie Gabriel, Daniel Algattas, Anna Tolstova

Work Flow	Date Submitted
Initial meeting with department	
Meeting with Program Review Team	
Report submitted to Program Review co-chair(s) & Dean	by NOON on March 18

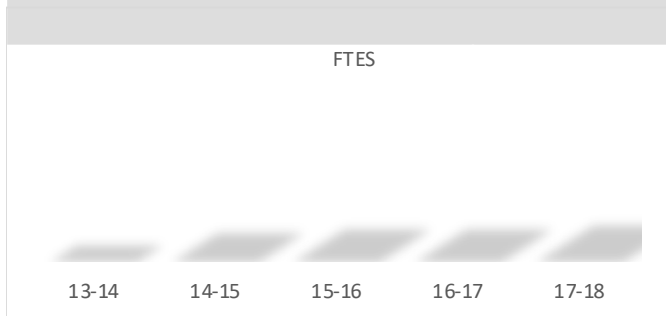
Staffing

List the number of full and part-time employees in your area.

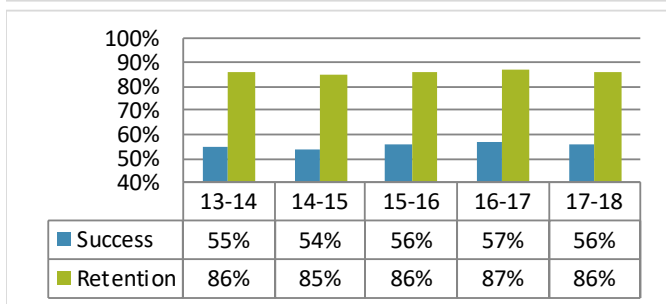
Classification	Number Full-Time	Number Part-time, Contract	Number adjunct, short-term, hourly
Managers	1	0	0
Faculty	13	70	0
Classified Staff	2	0	0
Total	16	70	0

Description:

The department offers courses in mathematics from developmental math through differential equations and linear algebra. Students who study mathematics will develop skills in logical thinking, problem solving, and decision making which are skills desired by institutions of higher learning and employers. Mathematics prepares students for a career in a diverse range of areas such as science and technology. The program offers an Associate in Science in Mathematics for Transfer (AS-T).



	13-14	14-15	15-16	16-17	17-18
Duplicated Enrollment	9,558	10,132	10,292	10,274	10,463
FTEF	71.22	77.31	82.23	87.49	88.24
WSCH per FTEF	516	511	491	461	467



	13-14	14-15	15-16	16-17	17-18
Sections	280	299	317	332	337
% of online enrollment	14%	17%	21%	24%	22%
Degrees awarded	18	14	19	23	18
Certificates awarded	N/A	N/A	N/A	N/A	N/A

Assessment:

The department increased in FTES by 2.2% from academic years 2016-17 to 2017-18 which met the campus goal of increasing by 2%. The retention and success rates dropped by 1% but not significant to cause concern since the rates have been roughly uniform from previous years. Ideally, the department would like to see higher success rates, but this will be challenging with the implementation of AB 705. However, this will provide an opportunity for the department to be creative and innovative to better serve our students. The retention rate is still strong at 86% percent but may suffer in the future due to a strong economy. Duplicated enrollment is up from 10,274 in 2016-17 to 10,463 in 2017-2018 which is understandable with the slight growth. The WSCH/FTEF rate increased to 467 but fails to meet the State's productivity standard of 525. The average room capacity is 30 students. With the lack of enough space and appropriate rooms the WSCH/FTEF rate will never be satisfied. The department's online enrollment is down from 24% to 22%. The 2% decrease is the result of the department slashing the online offerings due the Instruction's Office decision of faculty's load to be no more than 50% online. The number of AS-T is down from 23 to 18.

Progress from Last Year's Action Plan:

- Complete the Pre-Stats and Stats courses**
The courses were developed and submitted to the curriculum process. However, the courses were put on hold for articulation reasons. The department does see the need for Pre-Stats or non-stem math course to address AB 705 and provide an avenue for students pursuing a nonSTEM educational goal.
- Determine a director for the MESA grant**
The MESA grant was awarded but then postponed by MESA until November 2017. A director was found for Spring 2018, but the director resigned Summer 2018.
- Support the Math 601 lab**
The Math 601 lab or ALEKS lab continues to be supported by the department. The department sees the Math 601 lab as vital tool that will be used to implement AB 705. The structure/program of the lab will be revisited to suit the needs of students.

SAOs/SLOs/PLOs: (Summarize how the assessment of SAOs, PLOs and/or any SLOs that shows significant effect has influenced your goals. 200 Words Max)

The assessment of SAO's/SLOs/PLOs have allowed instructors to evaluate the quality of their instruction. The objectives and assessments are reviewed by the department to ensure consistency and appropriateness.

Departmental/Program Goals: (Goals should be specific, measurable, linked to your data analysis, and reflected in the Action Plan section). Tie goals to the college.

1. The department wishes to grow by 1.5%.
2. The department will re-evaluate the department's online program to ensure consistency and offer training for faculty interested in teaching online.
3. The department wishes to convert math classrooms to a hybrid computer lab/traditional style rooms.
4. The department will continue to implement AB 705 by exploring student support structures such co-requisite courses.
5. The department wishes to hire full time faculty and part time faculty.

Challenges & Opportunities: (Challenges and opportunities should be reflected in the Action Plan. 200 words maximum).

- The biggest challenge the department faces is AB 705. As a consequence, the department foresees many unprepared students will be placed in a college level math courses. This is an opportunity for the department to be creative and innovative support students.
- The department would like to increase our WSCH/FTEF rate. The department can achieve this by increasing the online offerings. However, faculty are restricted to teach only 50% online which creates a shortage of instructors.

Action Plan: (Describe your top priorities reflected in the Departmental/Program goals and provide specific steps to reach these goals.)

Action Steps	Department Goal	Necessary Resources to Complete	Target Completion Date
• Increase the departments online offerings	Goal 1 and Goal 2	Qualified and Experienced Faculty	Ongoing
• Seek funding from Basic Skills for computer cart	Goal 3	Funding	Fall 2019
• Create curriculum for co-requisite courses	Goal 4	Research models and funding for conferences	Fall 2019
• Meetings to evaluate dept's online program	Goal 2	Faculty	Fall 2019

Part I: Questions Related to Strategic Initiative: Increase Access

Goal: SBVC will improve the application, registration, and enrollment procedures for all students.

SBVC Strategic Initiatives: [Strategic Directions + Goals](#)

	Does Not Meet	Meets	Exceeds
Demographics	The program <u>does not provide</u> an appropriate analysis regarding identified differences in the program's population compared to that of the general population.	The program <u>provides an analysis</u> of the demographic data and provides an interpretation in response to any identified variance. The program <u>discusses the plans or activities</u> that are in place to recruit and retain underserved populations as appropriate.	In addition to the meets criteria, the program's analysis and plan <u>demonstrates a need</u> for increased resources.
Pattern of Service	The program's pattern of service is <u>not related to the needs of students.</u>	The <u>program provides</u> evidence that the pattern of service or instruction meets student needs. The program <u>discusses the plans or activities</u> that are in place to meet a broad range of needs.	In addition to the meets criteria, the program <u>demonstrates that the pattern of service needs to be extended.</u>

Use the demographic data provided to describe how well you are providing access to your program by answering the questions below.

Demographics – 2015-16 to 2017-18 Academic Years		
Demographic Measure	Program: Math	Campus- wide
Asian	4.5%	4.8%
African-American	12.9%	12.4%
Hispanic	70.2%	65.3%
Native American	0.6%	0.2%
Pacific Islander	0.2%	0.2%
White	10.7%	13.2%
Unknown	0.9%	3.9%
Female	57.7%	57.5%
Male	42.3%	42.5%
Disability	1.3%	5.4%
Age 19 or Less	6.4%	22.5%
Age 20 to 24	50.9%	34.7%
Age 25 to 29	21.8%	17.7%

Age 30 to 34	9.3%	9.3%
Age 35 to 39	4.9%	5.5%
Age 40 to 49	4.2%	6.2%
Age 50+	2.5%	4.1%

Demographics:

Provide an **analysis** of how internal demographic data compare to the campus population. Alternatively, provide demographics relative to the program that are collected. If internal data is not collected, describe plans to implement collection of data.

The demographic data from 2015-16 to 2017-18 comparing students served by the Math Program to those served at large by our campus reflects a positively diverse population being served by the program. Overall, the Math Program is in line with the similar demographics. However, there are a few differences that should be noted. The first is the significantly higher percentage of Hispanic students in the Math Programs versus the campus-wide statistic at a 4.9% lower. Respectively, the Math Program's White student population is lower by 2.5% compared to the campus-wide percentage. This is due to the Math Program working closely with student organizations and resource centers to attract disadvantage student populations to STEM majors. Additionally, this outreach has also impacted a higher number of younger students ages 20 – 24 to enroll in our Math Program. The shift increased the population of ages 20-24 to 50.9% for the Math Program versus 34.7% reflected from the overall campus. The age variation is significant with a 16.2% in the 20-24 age group and a respectively lower number of students ages 19 or less. This is due to the campus supporting programs, such as Middle College, Valley Bound Commitment, and First Year Experience, to attract younger students, especially those still enrolled in the high school age range. The Math Program focused more on attracting K-12 students, for example first year SBVC students, during programs such as STEM-A-Paloza. Additionally, our Math Program has a higher average/mean of age due to the fact that many upper division courses such as Nursing, Pre-Med, Engineering, etc. and these require prerequisites from Math courses. The Math Program can improve our outreach of attracting a younger than 19 age group population by expanding our outreach to K-12 schools. By visiting local high schools and even middle schools to explain advantages of our Math Program, we can increase our Math Program enrollment of younger students. Finally, the gender demographics from the Math Program has an insignificant variation compared to the campus statistics. Overall, the Math Department is on par with most of the campus demographics; however, there are a few areas that will allow for increase of enrollment into the Math Program.

Pattern of Service:

Describe how the pattern of service and/or instruction provided by your department serve the needs of the community. Include, as appropriate, hours of operation/pattern of scheduling, alternate delivery methods, weekend instruction/service.

The Math Program's pattern of service is purposefully developed to meet the needs of all students and the community at-large. Due to the fact that a majority of students are required to take math courses for specialized programs or to meet the minimum graduation requirements, we must offer a numerous number of classes to fulfill the student population demand. Thus, classes are offered 6 days a week from Monday-Saturday from 7am to 10pm. Students are also given the choices from classes that meet four times a week, twice a week or a single weekday. Additionally, we offer a variety of classes such as traditional, online, hybrid, short-term (8 week, 12 week, and 14 week) classes, weekend classes, etc.

As mentioned, the Math Program offers classes in a wide variety of delivery methods including alternatives for students with special needs. These methods include but are not limited to traditional, computer aided instruction, online classes, hybrid classes and working along DSP&S.

Due to changes in course requirements adding Statistics for nursing, business and various other majors in surrounding 4-year schools, we responded in 2015 by increasing the number of Statistic courses from 2 to 9. In the 2015-16 to 2017-18 Academic Year, we almost doubled those Statistic courses to meet the demand by the students wishing to enroll in these courses.

Finally, we are currently launching Math 096 (Beginning Intermediate Algebra) to remediate students in a shorter amount of time to address AB 705 changes and requirements places on colleges. Dialogue with counselors has led to the development of Math 141 (Business Calculus). Counselors reported to the department the need for such a class since many students were directed to take a similar class at other nearby community colleges. In the immediate future, we are researching the need for a Pre-Statistics Course to be offered in effort to provide additionally needed and requested courses.

Part II: Questions Related to Strategic Initiative: Promote Student Success

Goal: SBVC will increase course success, program success, access to employment, and transfer rates by enhancing student learning.

SBVC Strategic Initiatives: [Strategic Directions + Goals](#)

	Does Not Meet	Meets	Exceeds
Data/Analysis demonstrating achievement of instructional or service success	Program <u>does not provide an adequate analysis</u> of the data provided with respect to relevant program data.	Program <u>provides an analysis</u> of the data which indicates progress on departmental goals.	In addition to the meets criteria, the program <u>uses the achievement data</u> in concrete planning and <u>demonstrates</u> that it is prepared for growth.
Service Area Outcomes and/or Student Learning Outcomes and/or Program Level Outcomes	Program <u>has not demonstrated</u> that it is continuously assessing Service Area Outcomes (SAOs) and/or Student Learning Outcomes (SLOs) and/or Program Level Outcomes (PLOs) based on the plans of the program since their last program efficacy. Evidence of data collection, evaluation, and reflection/feedback, and/or connection to area services is <u>missing or incomplete</u> .	Program <u>has demonstrated</u> that it has fully evaluated within a four-year cycle and is continuously assessing <u>all</u> Service Area Outcomes (SAOs) and/or Student Learning Outcomes (SLOs) and/or Program Level Outcomes (PLOs).	In addition to the meets criteria, the program <u>demonstrates that it has fully incorporated Service Area Outcomes (SAOs) and/or Student Learning Outcomes (SLOs) and/or Program Level Outcomes (PLOs) into its planning, made appropriate adjustments, and is prepared for growth.</u>

Student Success:

Provide an analysis of the data and narrative from the program's EMP Summary and discuss what it reveals about your program. (Use data from the Charts that address Success & Retention and Degrees and Certificates Awarded")

In addressing the 2015-16 to 2017-18 statistics from the EMP Summary there are minor differences between the past 5 years. The Success & Retention from 2014-2015 was at 54%, a decrease from the previous year, but the next two years had at least a 1% increase (2015-2016 at 56% and 2016-2017 at 57%) in Success and a decrease in Retention (2015-2016 at 86% and 2016-2017 at 87%). This slight increase may be due to new Math faculty hires reflecting similar backgrounds to the students in our programs. Attraction to the AS-T degree has also created an increase in the number of students interested in the Math major and completing their studies of a Math degree. Additionally, the Math faculty have been working collectively to promote student success and positive completion of Math courses. Faculty members are well aware and familiar with resources offered by our campus and encourage their students to seek these resources. Furthermore, the Student Success Center has undoubtedly had a large increase in the number of students visiting the center and requesting assistance. The resources provided by the Student Success Center has helped with the Success and the lowered Retention of students. In 2014-2015, the Math Program was at a low of 14 degrees awarded. The number of degrees rose during the 2015-16 to 2017-18 academic years. The 2015-2016 academic year had 19 degrees awarded, followed in 2016-2017 with 23 degrees awarded. This increase was due to the collaboration of the Math Program with the Student Success Center. Additionally, STEM Counselors were readily available to aide students with their goals. Our efforts to help students succeed in STEM classes and majors is reflected in the higher number of degrees awarded. Furthermore, we are currently working on revamping other STEM programs for student, such as MESA.

No Certificates Programs were implemented during the 2015-16 to 2017-18 academic years; therefore, no Certificates were awarded.

Supplemental Data:

Provide any additional information, such as job market indicators, standards in the field or licensure rates that would help the committee to better understand how your program contributes to the success of your students.

The Math Program provides the opportunity for students to fulfill the prerequisite requirements of a minimum of one Math course for any degree they may be pursuing, whether an AS-T at SBVC or a transfer credit for a 4-year degree at another school. Our courses provide first-class Math education that is competitive with similar courses at various schools. We prepare our students to succeed in the field of Math both on towards educational or job oriented career goals. The Bureau of Labor Statistics indicates that “employment of math occupations is projected to grow 28 percent from 2016 to 2026” bringing an astonishing 50,400 new jobs (<https://www.bls.gov/ooh/math/home.htm>). According to the U.S. Department of Labor, Math occupations are growing at a much more accelerated rate than the average of all other current occupations. Job growth is anticipated in the fields of business and government agencies due to the increasing trend and demand for the use, interpretation and analysis of ‘big data’ that is tackled by employees in math occupations. There are many employment opportunities for students with an Associate’s Degree in Math, such as disciplines of accounting, finance, healthcare, insurance and various operations. Our Math Program provides avenues of starting from a remedial level to successfully completing college-level transfer math courses. Requirements in many job fields and professional licenses have dramatically changed with the incorporation of the need for Statistics in individuals’ education background. According to the

National Center for Education Statistics the number of undergraduates in statistics has risen, which has reflected an increase by more than 300% since the 1990s

(<https://thisisstatistics.org/more-students-earning-statistics-degrees-but-not-enough-to-meet-surging-demand-for-statisticians/>).

McKinsey Global Institute stated a “significant constraint on realizing value from Big Data will be a shortage of talent, particularly of people with deep expertise in statistics

(<https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/big-data-the-next-frontier-for-innovation>)

Student Learning Outcomes:

Course SLOs/SAOs. Demonstrate that your program is continuously assessing Course Student Learning Outcomes (SLOs) and/or Service Area Outcomes (SAOs). Include evidence of data collection, evaluation, and reflection/feedback, and describe how the SLOs/SAOs are being used to improve student learning (e.g., faculty discussions, SLO revisions, assessments, etc.). Generate reports from the Cloud as necessary. Include analysis of SLO/SAO Cloud reports and data from summary reports. This section is required for all programs.

At the end of the semester the Math Program collects data on the Student Learning Outcomes (SLOs) for each course offering. This data is analyzed to improve the Math Program effectiveness and student success. Many faculty members use SLOs to reflect on their style of teaching and enhance teaching areas that have proven to be effective. The Math Program collectively uses the data to improve courses and the actual assessment of individual SLOs. The department has discussed several aspects, for example, in low scoring percentages where students are not meeting the intended SLO, the team has discussed whether it's the assessment tool or is it a relevant and important learning outcome that requires more time. During department meetings, we review SLOs periodically to suggest possible revisions to future SLOs questions/statements to better meet the needs of the student population and accurately reflect student success.

Assessment Method for all Courses and Section per Semester: The Student Learning Outcome Assessment Instrument is administered as an in-class assignment. The assessment instrument consisted of four questions corresponding to the four learning outcomes. Student responses to questions assessed cognitive mastery of college algebra concepts. Achievement of learning outcomes is demonstrated by satisfactorily responding to questions included on the assessment instrument. Satisfactory response is being measured as 70% accuracy or greater.

Sample SLO with Reflections and Data Collection: MATH 102, 2015-16

Data:

- 143-817 students assessed
- 47.61%-67.13% students met SLOs #1-5

Reflections:

- For #1, more than just the 15 students had the concept right, but they always either did not change the % or didn't change it correctly. And they forgot units. I emphasize units on word problems. I will have to emphasize the % more. And mark down on quizzes and test for not putting units. Sometimes I just correct it and do not take points off. If I do, it may get their attention. #2 was the best. This year, I emphasize this type of question just as much as the more standard type of questions for algebra of functions. Last time, I looked over it and

stuck to the standard type, and they did not do well. This year, they did much better. #3 this one was not too bad either. Perhaps just a little more emphasis on vertices. I forgot to put it on a quiz, but did later put it on a test. #4 I covered in class, but the SLO question sheet did not provide one. #5 They did better than I thought they would. Completing the square is very liked, but I think because I did emphasize it this time around, they did much better than last time I taught 102. And for lecture I pointed out patterns such as when a was under y , then it changed the y -values of the center. If it was under x , then it changed the x -values of the center. This helped a lot of students remember if the ellipse was horizontal or vertical. (MATH-102-05 for 2015FA)

Sample SLO with Reflection and Data Collection: Math 102, 2016-2017

Data:

- 675-698 students assessed
- 51.84%-58.17% students met SLOs #1-4

Reflections:

- Students seem to do better on graphing than they do with exponential functions. I believe the best thing to do is to familiarize them further with exponential and log functions, and to get them trying these concepts out on their calculators. (MATH-102-13 for 2017SP)
- Overall student success was very poor. I would not recommend short term online College Algebra courses for our student population. (MATH-102-74 for 2017SP)
- Students were absent a lot and not diligent in doing homework. (MATH-102-10 for 2017SP)
- The result of student SLO assessment for this class is below: SLO 1: 76 percent of the students had satisfactory performance; SLO2: 44 percent; SLO 3: 80 percent; SLO 4: 72 percent. Except for SLO 2, this distribution is satisfactory. Most of the students in this class were self-motivated and diligent. Some students completed the prerequisite class a long time ago and would like to refresh their knowledge; however, they are not allowed to retake the prerequisite class, which may have impacted their ability to learn.

Sample SLO with Reflections and Data Collection: MATH 108, 2015-16

Data:

- 646 students assessed
- 46.24%-89.02% students met SLOs #1-4

Reflections:

- probability question was poorly attempted. Almost all students did both Data summary and hypothesis questions correctly. (MATH-108-06 for 2015FA)
- With the exception of SLO #2, I'm satisfied with the result. Since Statistics is not a required in all/most high school curriculum, I think that the majority of students came away with an

appreciation of the subject in the end.
(MATH-108-07 for 2015FA)

Sample SLO with Reflections and Data Collection: MATH 108, 2016-17

Data:

- 534 students assessed
- 62.36%- 91.20% students met SLOs #1-4

Reflections:

- Probability concept was poorly done. This seems to be the case every semester, I am really puzzled about this, since the wording of the problem is not that complex. The rest of the questions were overall attempted well.
(MATH-108-06 for 2016FA)

*No Course Map is available. The Math Program will be working on creating the first course map for future use.

Program Level Outcomes:

If your program offers a degree or certificate, describe how the program level outcomes are being used to improve student learning at the program level (e.g., faculty discussions, SLO revisions, assessments, etc.). **Describe** how this set of data is being evaluated or is planned to be evaluated. Generate reports from the SLO Cloud as necessary. Include analysis of SLO Cloud reports and data from 4-year summary reports. If your program does not offer a degree or certificate, this section is optional (but encouraged).

The data from the Program Level Outcomes is being used as a measure for improvement or a mark for excellence. The information is reviewed periodically by the Chair of the Department, but we are currently working on sharing this information to a broader number of members to enhance the department goals for improvement. We plan to evaluate this data on a more consistent basis of at least once a year. Below is information obtain from the Cloud for reflection and analysis review.

Math AS and Transfer for 2015-2016 (Annual)

Data:

- 1421 students assessed
- 57.8% students met SLOs #1-5

Reflection:

- Ironically, the easiest SLO (#5) is the one most people flubbed. My suggestion is that we eliminate the option of "conditionally convergent," which is more tied to the A.S.T., not the Root Test. But everyone seems to have mastered the idea of using the Tabular Method.
(MATH-251-03 for 2015FA)
- There no need to make any changes in the content, assessment method or SLO.
(MATH-265-01 for 2015FA)
- I noticed students algebra skills are fairly weak, which explain a huge gap in the result.
(MATH-250-03 for 2015FA)
- The students could have done just a bit better if it had not been at the end of the school year and full of distractions. The SLOs were given as an extra credit assignment which did not promote study time as if it were on the final exam. Overall, the students who passed the

class showed an in-depth knowledge of the material and I'm looking forward to seeing them progress in Math 251. I do believe we as a department need to revise the SLOs in general.

Math AS and Transfer for 2016-2017 (Annually)

Data:

- 1203 students assessed
- 65.09% students met SLOs #1-5

Reflection:

- They seem strong on Integration by Parts. The glaring weakness is where they do not spot, on their own, the necessary adjustments necessary to integrate via x or y for the Shell Method. If a problem is slightly off the beaten path, too many don't pick up the clue. This can only be grasped via more diligent homework and including it in more quizzes. Also, a distressing number flubbed the Root Test, which ought to be a simple diagnosis. Will try to beef that up with more clarity in teaching.
(MATH-251-01 for 2016FA)
- The two chief takeaways of concern are: 1) students have a natural resistance to word problems and seem to freeze up if something even slightly unfamiliar comes along. They don't really give a strong effort to doing even a straightforward related-rates problem. 2) the concept of a u -substitution is still very shaky; we must do better at teaching two points: a) the selection of " u " must be the INSIDE function. b) the " du " must be the exact derivative of " u ." This was plainly a mystery to some, and we will redouble our efforts to clarify the above points.
(MATH-250-01 for 2017SP)
- Statement 3 was not included in the version of the SLO that I distributed. Unfortunately, I administered the SLO from last year which did not include the 2 problems (numbers 3 and 5) that assessed integrals and integration formulas which were included on the updated version.
(MATH-250-03 for 2017SP)

Math AS and Transfer for 2016-2017 (4-Year Summary)

Data:

- 3360 students assessed
- 62.65% students met SLOs #1-5

Reflection:

- Overall assessment results suggest moderate instructional improvement and emphasis in major course content areas understanding linear transformation and application. All the other SLO have been met with at least 75% or more. As suggested by some of the tenets of adult learning theory, active involvement in the learning experience is beneficial for adults. Additionally, relevance and the inclusion of problem-centered activities and real world problems is a cornerstone of increased adult learning. With these ideas in mind, although no content revisions are suggested at this time, a reconfiguration of time devoted to individual content areas where significant instructional improvement/emphasis has been

deemed warranted may be beneficial. The adjustment of homework and other evaluative measures might be modified to garner more timely feedback for students in content areas where both significant and moderate instructional improvement is deemed warranted as well. Inclusion of additional problem centered activities may enhance instruction and improve student performance and confidence. The Student Learning Outcome assessment instrument will be revised so that the five student learning outcomes will be assessed using five different questions instead of four, thus maximizing our ability to assess a singular outcome without combining the content addressed by more than one outcome/course objective. Check any that applies: O E-mail Discussion with O FT Faculty O Adjunct Faculty. Date(s): X Department Meeting. Date(s): O Division Meetings. Date(s): O Campus Committees. Date(s): (ex: Program Review; Curriculum; Academic Senate; Accreditation & SLOs) SLO Dialogue focused on: * Perceived trends in data collected from individual instructors * Overarching themes identified in methods of improving instruction * The need to collect more data over time before making major adjustments to Student Learning Outcomes and/or the assessment instrument. SLOs for Math 265 will not be rewritten at this time. O Professional Development x X Intra-departmental changes O Curriculum action O Requests for resources

(MATH-265-01 for 2014FA)

- The exam are given on the last day of class, overall, majority of students in the course are able to grasp the concepts being tested but their algebra skills are weak. For example, in question #3, student fail to simplify fraction correctly. For the next term of Math 250, I will encourage students to review their algebra skills.

(MATH-250-03 for 2015SP)

- Note that there are two SLO problems dealing with derivatives; these students did well on the Quotient Rule (15/16) but poorly on the related-rates (6/16). We will try to more effectively emphasize story problems; some students gave it but a cursory attempt. On limits we had a similar disparity; 13 out of 16 did well on a standard infinity rational problem, but only 6 out of 16 fully understood a complex fraction and how to successfully modify it. I would suggest in future semesters that these SLOs should be divided for more accurate assessment.

(MATH-250-01 for 2015SP)

- The SLO exam are given as the final for the course, students are giving 2.5 hours to complete the exam, more than half the class finish the exam within 2 hours time period. Students understand the concept of evaluating the integral involving area and volume in rectangular and spherical coordinate system but are unable to get the correct answer due to their weakness in algebra, such as evaluating answer involving the usage of logarithmic properties.

(MATH-252-01 for 2015SP)

- Ironically, the easiest SLO (#5) is the one most people flubbed. My suggestion is that we eliminate the option of "conditionally convergent," which is more tied to the A.S.T., not the Root Test. But everyone seems to have mastered the idea of using the Tabular Method.

(MATH-251-03 for 2015FA)

- There no need to make any changes in the content, assessment method or SLO.

(MATH-265-01 for 2015FA)

- I noticed students algebra skills are fairly weak, which explain a huge gap in the result.

(MATH-250-03 for 2015FA)

- The students could have done just a bit better if it had not been at the end of the school year and full of distractions. The SLOs were given as an extra credit assignment which did not promote study time as if it were on the final exam. Overall, the students who passed the

class showed an in-depth knowledge of the material and I'm looking forward to seeing them progress in Math 251. I do believe we as a department need to revise the SLOs in general.

*No Course Map is available. The Math Program will be working on creating the first course map for future use.

Part III: Questions Related to Strategic Initiative: Improve Communication, Culture & Climate

Goal: SBVC will promote a collegial campus culture with open line of communication between all stakeholder groups on and off-campus.

SBVC Strategic Initiatives: [Strategic Directions + Goals](#)

	Does Not Meet	Meets	Exceeds
Communication	The program does not identify data that demonstrates communication with college and community.	The program identifies data that demonstrates communication with college and community.	In addition to the meets criteria, the program demonstrates the ability to communicate more widely and effectively, describes plans for extending communication, and provides data or research that demonstrates the need for additional resources.
Culture & Climate	The program does not identify its impact on culture and climate or the plans are not supported by the data and information provided.	The program identifies and describes its impact on culture and climate. Program addresses how this impacts planning.	In addition to the meets criteria, the program provides data or research that demonstrates the need for additional resources.

Communication, Culture & Climate:

Describe how your program communicates its services, goals, and achievements to the campus and to the Community (outreach, events, website, campus emails, flyers, etc.).

The Math Program strives to provide outreach of our services, goals and achievements through various avenues to ensure students of all backgrounds can access information.

The Math Program has a website dedicated to readily find resources available to students and the community, such as:

- Career outlook for Math majors, links to several outside resources for job outlook
- Math Basic Skills Videos to help students remediate, includes topics from arithmetic algebra
- Other resources so students can remediate and learn more about careers in math
- Students can request information through the website by filling out and submitting a form
- Additional information is shared with SBVC to be included in the Course Catalog, such as Math Program description, criteria, courses available and prerequisite information.

In collaboration with the Student Success Center the Math department offers preassessment workshops at local high schools. The workshops' goal is to help students prepare for the SBVC Math course placement process. Unfortunately, as of 2017 these workshops are no longer needed due to AB 705. In response to the law SBVC will no longer use a placement test.

Information for special events or upcoming deadlines are communicated via flyers and campus emails.

The Math Program also offers scholarships for students with high merits and the recipients are recognized annually at an award banquet.

Describe how your program seeks to enhance the culture and climate of the college.

The SBVC Climate and Culture Goal: “SBVC will promote a collegial campus culture with open line of communication between all stakeholder groups on and off-campus”. Our Math Program takes this goal to heart as we are committed to ensure all our students succeed within our campus and off-campus climate and culture. The Math Program reaches out to local stakeholders for special student projects. We try to get the local community involved and engaged in culturally enriched activities, for example the Golf Cart Project. Additionally, the Math Program is also dedicated to ensuring a welcoming and ethnically rich learning environment. Our faculty members and staff welcome all our students regardless of their socioeconomic backgrounds. To reduce the financial stress of the high costs of mathematic books, several faculty members have adopted to use Open Educational Resources (OER). OER offers the equivalent educational resources as high-priced books, but at zero cost to the students.

Describe one or more external/internal partnerships.

The Math Program has fully engaged and collaborated with the Student Success Center to provide additional and exceptional resources to students. Faculty is also provided with a Supplemental Instructional (SI) Leaders to assist students with tutoring, homework and classwork. These Student Success Center and the SI Leaders have been extremely helpful in reducing Retention and improving student Success for graduation. Recently, the department has partnered with Bloomington High School to offer our MATH 601 course. The goal of the partnership is to ensure students are prepared for college level math. This partnership is in response to the elimination of placement exams.

What plans does your program have to further implement any of these initiatives?

The Math Program is working on growing our presence within campus and the immediate surrounding community. There is a plan to expand our college courses to be taught at local high schools for credit; For example, we have already initiated our Math 601 at Bloomington High School and are also on track to begin at the Colton High School campus beginning this Summer 2019. Teaching our course at the local high schools will not only help incoming students be prepared to excel in a college-level math course, but it will increase the SBVC profile in the local community. Our Math Program will also like to offer non-credit courses that can provide some sort of track to a Certificated Program. These classes will most likely appeal more to working professionals that can use these non-credit courses or Certificate to build up their resume and polish their Math skills for the workforce.

IV: Questions Related to Strategic Initiative: Maintain Leadership & Promote Professional

Development

Goal: SBVC will maintain capable leadership and provide professional development to a staff that will need skills to function effectively in an evolving educational environment.

SBVC Strategic Initiatives: [Strategic Directions + Goals](#)

	Does Not Meet	Meets	Exceeds
Professional Development	The program does not identify currency in professional development activities.	Program identifies current avenues for professional development.	In addition to the meets criteria, the program shows that professional development has impacted/expanded the program and demonstrates that the program is positioning itself for growth.

Professional Development:

1. Discuss the ways that members of your department maintain currency in their field (conferences, workshops, technical trainings, etc.).

The Math Program's faculty and adjunct members stay up to date with trends and changes in the field of Math through various educational methods that include conferences, trainings and workshops. The Math educational has seen the most change when it comes to incorporating technology as a resource for students and future workforce professionals. An example of this type of training that our faculty has used is MyOpenMath. This is a free online resource for Math professionals and students. This resource has provided for our faculty members to conduct trainings for our own faculty, adjunct and additional staff to attend, which was well attended and informative for those in attendance. Additionally, several members of our faculty attend regular technology discussions with current book publishers. These meetings, trainings and discussion provide an open forum to use hands on technology, ask questions and provide feedback on student needs. Furthermore, faculty has been attending a series of workshop regarding the elaborate rollout, interpretation and implementation of AB 705. Our Math Program also strives to provide trainings, assistance and resource opportunities to all our staff, so each fall and spring semester we offer Adjunct Orientation Trainings. Finally, our faculty frequently attends conferences, training and workshop promoted by the campus Professional Development Coordinator.

2. Identify the professional organizations that your department and/or department members belong to and how those organizations meet professional development parameters.

Individual faculty and adjunct members of the Math Department belong to professional organization that they have sought out on their own will. A few examples are: Mathematical Association of America (MAA), AMATYC Student Mathematics League Math Competition, Linda.com, 3CSN and California Community College Academic Senate. These organizations allow our staff to meet professional development factors by sharing information on the latest trends and educational changes in the region and along the world of Math. Additionally, some of these organizations promote access for faculty and staff to network and bring resources back to our campus in effort to benefit our students.

- Discuss specific ways faculty and staff engage in professional growth (i.e. attend or present at conferences, establish training opportunities with other community colleges). Include future opportunities that are planned by faculty and staff. Discuss how professional development has impacted/expanded the program.

Our Math faculty and staff engage in professional growth on a regular basis. Members of our department have participated or presented in the following trainings and conferences: African American Male Education Network & Development, Riverside County Office of Education Equity Conference, Mount San Jacinto College, San Diego City College, Hispanic Association of Colleges & Universities, SBVC Academic Senate, SBVC All Chairs Meeting, SBVC Articulation Committee, SBVC Curriculum Committee and High School Counselors & Career Technicians Conference.

V: Questions Related to Strategic Initiative: Effective Evaluation & Accountability

Goal: SBVC will improve institutional effectiveness through a process of evaluation and continuous improvement.

SBVC Strategic Initiatives: [Strategic Directions + Goals](#)

	Does Not Meet	Meets	Exceeds
Mission/ Statement of Purpose	The program does not have a mission/ statement of purpose, or it does not clearly link with the institutional mission.	The program has a mission/statement of purpose, and it links clearly with the institutional mission.	
Productivity	The data does not show an acceptable level of productivity for the program, or the issue of productivity is not adequately addressed.	The data shows the program is productive at an acceptable level.	The program functions at a highly productive level and has planned for growth as appropriate.
Relevance, Currency, Articulation	The program does not provide evidence that it is relevant, current, and that courses articulate with CSU/UC, if appropriate. <u>Out of date course(s) that were not launched into Curricunet by Oct. 1, 2017 may result in an overall recommendation no higher than Conditional.</u>	The program provides evidence that the curriculum review process is up to date. Courses are relevant and current to the mission of the program. Appropriate courses have been articulated or transfer with UC/CSU, or plans are in place to articulate appropriate courses.	In addition to the meets criteria, the program discusses plans to enhance current course offerings that link to student/community needs and positions the program for improved student outcomes.
Challenges	The program does not incorporate weaknesses and challenges into planning.	The program incorporates weaknesses and challenges into planning.	The program incorporates weaknesses and challenges into planning that demonstrate the need for expansion.

Mission and Purpose:

San Bernardino Valley College maintains a culture of continuous improvement and a commitment to provide high-quality education, innovative instruction, and services to a diverse community of learners. Its mission is to prepare students for transfer to four-year universities, to enter the workforce by earning applied degrees and certificates, to foster economic growth and global competitiveness through workforce development, and to improve the quality of life in the Inland Empire and beyond.

What is the mission statement or purpose of the program?

The purpose of the Math program is to foster a strong knowledge of basic math skills and prepare students with a solid foundation to transfer to a 4-year university of their choice or be confident in competing for immediate placement in the workforce.

How does this mission or purpose relate to the college mission?

The Math Program supports and strives to develop the educational skills students need to successfully transfer to a 4-year college, which meets the mission of SBVC and the purpose of the Math Program. The Math Program strives to provide the skills needed for all students to excel in the workforce. It is the Math Program’s goal that students who complete any and all Math courses be able to independently use their Math education in the future whether in an employment setting or at a 4-year university.

Productivity:

Provide additional **analysis and explanation** of the productivity data and narrative in the EMP summary if needed. Use data from charts (FTEs; Enrollment; FTFE and WSCH per FTFE). Explain any unique aspects of the program that impact productivity data, for example, Federal Guidelines, Perkins, number of workstations, licenses, etc.

During the time period 2015-2016 to 2016-17, the WSCH per FTEs dropped due to various factors. First, the regional economy had improved providing more available jobs for individuals in the area. This caused a drop-in enrollment at the community college-level, since many began seeking employment opportunities rather than attending schools. Many Math classes had to be canceled due to the low enrollment per section. Second, our Math Program along with a few other programs have difficulty accommodating particular courses because of the lack of classroom/facility spaces available. We are constraint to only teach in class traditional courses by the available facilities provided to us for that semester.

Relevance and Currency, Articulation of Curriculum:

The Content Review Summary from Curricunet indicates the program’s current curriculum status. If curriculum is out of date, explain the circumstances and plans to remedy the discrepancy. (NOTE: If the report is inaccurate, contact Mary Copeland, Co-Chair, Curriculum Committee, (mcopel@valleycollege.edu) or Kay Dee Yarbrough, Administrative Curriculum Coordinator, (kyarbrough@sbccd.cc.ca.us) for updated information.

Mathematics, Business & Computer Technology				
Mathematics				
	Course	Status	Last Content Review	Next Review Date
	MATH 090 Elementary Algebra	Active	11/04/2013	11/04/2019
	MATH 093 Plane Geometry	Active	02/07/2011	02/07/2017
	MATH 095 Intermediate Algebra	Active	02/07/2011	02/07/2017
	MATH 096 Elementary and Intermediate Algebra	Active	10/08/2018	10/08/2024
	MATH 102 College Algebra	Active	10/08/2018	10/08/2024
	MATH 103 Plane Trigonometry	Active	10/08/2018	10/08/2024

MATH 108 Introduction to Probability and Statistics	Active	10/08/2018	10/08/2024
MATH 115 Ideas of Mathematics	Active	10/08/2018	10/08/2024
MATH 141 Business Calculus	Active	10/08/2018	10/08/2024
MATH 151 Precalculus	Active	04/25/2016	04/25/2022
MATH 222 Independent Study in Mathematics	Active	04/04/2011	04/04/2017
MATH 250 Single Variable Calculus I	Active	05/14/2018	05/14/2024
MATH 251 Single Variable Calculus II	Active	04/25/2016	04/25/2022
MATH 252 Multivariable Calculus	Active	04/18/2011	04/18/2017
MATH 265 Linear Algebra	Active	04/25/2016	04/25/2022
MATH 266 Ordinary Differential Equations	Active	04/01/2013	04/01/2019
MATH 601 Independent Lab for Fundamental Mathematical Skills	Active	11/05/2018	11/05/2024
MATH 942 Arithmetic	Active	12/06/2010	12/06/2016
MATH 942A Arithmetic: Whole Numbers	Active	12/06/2010	12/06/2016
MATH 942B Arithmetic: Fractions and Decimals	Active	12/06/2010	12/06/2016
MATH 942C Arithmetic: Proportions, Ratios, Percents, and Geometry	Active	12/06/2010	12/06/2016
MATH 952 Prealgebra	Active	12/06/2010	12/06/2016
MATH 952A Prealgebra: Integers	Active	12/06/2010	12/06/2016
MATH 952B Prealgebra: Fractions	Active	12/06/2010	12/06/2016
MATH 952C Prealgebra: Exponents and Linear Equations	Active	12/06/2010	12/06/2016
MATH 952D Prealgebra: Decimals, Percent, and Ratios	Active	12/06/2010	12/06/2016
MATH 962 Arithmetic and Prealgebra	Active	11/04/2013	11/04/2019
MATH 010 Foundation Skills For Mathematical Majors	Historical		
MATH 090 Elementary Algebra	Historical		
MATH 090 Elementary Algebra	Historical		
MATH 090 Elementary Algebra	Historical		
MATH 093 Plane Geometry	Historical		
MATH 093 Plane Geometry	Historical		
MATH 095 Intermediate Algebra	Historical		
MATH 095 Intermediate Algebra	Historical		

MATH 102 College Algebra	Historical		
MATH 102 College Algebra	Historical		
MATH 102 College Algebra	Historical		
MATH 102 Introduction to College Algebra	Historical		
MATH 103 Plane Trigonometry	Historical		
MATH 103 Plane Trigonometry	Historical		
MATH 103 Plane Trigonometry	Historical		
MATH 103 Plane Trigonometry	Historical		
MATH 103 Plane Trigonometry	Historical		
MATH 108 Introduction to Probability and Statistics	Historical		
MATH 108 Introduction to Probability and Statistics	Historical		
MATH 108 Introduction to Probability and Statistics	Historical		
MATH 115 Ideas of Mathematics	Historical		
MATH 115 Ideas of Mathematics	Historical		
MATH 115 Ideas of Mathematics	Historical		
MATH 141 Business Calculus	Historical		
MATH 151 Precalculus	Historical		
MATH 151 Precalculus	Historical		
MATH 151 Precalculus	Historical		
MATH 222 Independent Study in Mathematics	Historical		
MATH 250 Single Variable Calculus I	Historical		
MATH 250 Single Variable Calculus I	Historical		
MATH 250 Single Variable Calculus I	Historical		
MATH 250 Single Variable Calculus I	Historical		
MATH 250 Single Variable Calculus I	Historical		
MATH 251 Single Variable Calculus II	Historical		
MATH 251 Single Variable Calculus II	Historical		
MATH 251 Single Variable Calculus II	Historical		
MATH 252 Multivariable Calculus	Historical		
MATH 265 Linear Algebra	Historical		
MATH 265 Linear Algebra	Historical		

MATH 266 Ordinary Differential Equations	Historical		
MATH 266 Ordinary Differential Equations	Historical		
MATH 285 Honors in Mathematics	Historical		
MATH 285 Honors in Mathematics	Historical		
MATH 601 Independent Lab for Fundamental Mathematical Skills	Historical		
MATH 942 Arithmetic	Historical		
MATH 942A Voc Arithmetic: Whole Numbers	Historical		
MATH 942B Vocational Arithmetic: Fractions and Decimals	Historical		
MATH 942C Vocational Arithmetic: Proportions, Ratios, Percent, and Geometry	Historical		
MATH 952 Prealgebra	Historical		
MATH 952A Prealgebra: Integers	Historical		
MATH 952B Prealgebra: Fractions	Historical		
MATH 952C Prealgebra: Exponents and Linear Equations	Historical		
MATH 952D Prealgebra: Decimals, Percent, and Ratios	Historical		

Articulation and Transfer

List Courses above 100 where articulation or transfer is not occurring	With CSU	With UC

Describe your plans to make these course(s) qualify for articulation or transfer. Describe any exceptions to courses above 100.

N/A

Currency

Review all mentions of your area in the catalog. Is the information given accurate? If not, briefly identify the areas that will be revised.

Math 095 needs to be updated to include logarithms and exponential function. The prerequisite needs to be removed from the course. This is necessary to align more with Math 096 and other intermediate algebra courses at surrounding community colleges. This course will be launch for modification through the

curriculum process. Math 093 will be recommended for deletion. The department needs to discuss whether the course is needed with passage of AB705. The course has not been offered in recent years. Math 942A, Math 942B, Math 942C, Math 952A, Math 952B, Math 952C, are Math 952D are currently going through the curriculum process for deletion. Math 942, Math 952, and Math 090 will be reviewed and discussed among faculty to determine whether these are needed do the changes from AB705. Math 252 needs to be reviewed and will be discussed among faculty to make sure it's current or if there is any topics that should be included. Math 266 and Math 222 will need to be reviewed.

If any courses are no longer offered, list them here. (Include Course # and Title of the Course). If the information is inaccurate and/or there are listed courses not offered, how does the program plan to remedy the discrepancy? Follow the link below and review the last college catalog data.

<http://www.valleycollege.edu/academic-career-programs/college-catalog.aspx>

If your information needs updating, contact Kay Dee Yarbrough, Administrative Curriculum Coordinator, (kyarbrough@sbccd.cc.ca.us).

Math 942, Math 952, and Math 090 will no longer be offered

Challenges:

Referencing the narratives in the EMP summary, provide any additional data or new information regarding planning for the program. In what way does your planning address trends and weaknesses in the program?

AB705 has impacted math course offerings. As a consequence, many remedial courses will no longer be offered. The lowest offering for math will be Beginning and Intermediate Algebra. The department anticipates there will be an increase in the number of sections for Math 108 (Statistics) and Math 115 (Ideas of Math). NonSTEM majors will not necessarily need to take Math 102 (College Algebra) as they traditionally did in order to meet their transfer requirements. In addition, more and more programs at universities are requiring students to take statistics instead of college algebra. For example,

“After an extensive review process, the UC system approved the Statway curriculum for transfer in early 2015, and last week they released new [Transfer Course Agreement](#) guidelines that require only a small set of preparatory skills for statistics, which can be offered in a prerequisite or as a co-requisite. Intermediate algebra is no longer required.”

<https://accelerationproject.org/Whats-New/ctl/ArticleView/mid/677/articleId/19/UCCSU-Path-Cleared-for-Statistics-Pathways>

VI: Questions Related to Strategic Initiative: Provide Exceptional Facilities

Goal: SBVC will support the construction and maintenance of safe, efficient, and functional facilities and infrastructure to meet the needs of students, employees, and the community.

SBVC Strategic Initiatives: [Strategic Directions + Goals](#)

	Does Not Meet	Meets	Exceeds
Facilities	The program <u>does not provide an evaluation</u> that addresses the sustainability of the physical environment for its programs.	Program <u>provides an evaluation</u> of the physical environment for its programs and <u>presents evidence</u> to support the evaluation.	In addition to the meets criteria, the program has <u>developed a plan</u> for obtaining or utilizing additional facilities for program growth.

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Facilities:

Provide an evaluation of the facilities in your area and their impact on the educational environment for your students (classroom facilities, technology, space needs, maintenance issues, etc.). Address sustainability of the facility (including technology needs).

Due to AB705, the Department anticipates there will be many under prepared students at the college level math courses. The CCC Chancellor’s and Academic Senate recommend that math departments around the state to implement a support classes. This includes a corequisite model,

“Corequisite models are the most powerful strategy for increasing completion of transfer-level math and English for students designated “not college ready.” In states that have replaced traditional remediation with corequisite models, such as Tennessee, Colorado, Indiana, and West Virginia, students are completing transfer requirements in math and English at nearly three times the national average, and in half the time.”

<https://accelerationproject.org/Corequisites>

Ideally, the department would like to offer such a model but there are some serious issues that would need to be figured out such as the following:

1. Lack of classroom space
2. Not enough faculty/adjunct faculty to teach the courses. Adjunct faculty cannot go beyond 10 units. If a corequisite model is adopted the support class would likely be a 2 to 3-unit course.

In the mean-time, the department along with the English department have secured funding for classroom sets of Chromebooks to be used in the classrooms for both departments. The department will use these Chromebooks to help remediate students via tools such as ALEKS, MyOpenMath, and other online tools.

VII: Previous Does Not Meets Categories

Listed below, from your most recent Program Efficacy document, are those areas which previously received “Does Not Meet.” Address, in **DETAIL AND WITH SPECIFIC EXAMPLES**, how each deficiency was resolved. If these areas have been discussed elsewhere in this current document, provide the section where these discussions can be located.

Student Success: This should be a major area of analysis, especially as Math is an academic program. However, beyond some description of the success rates and degrees awarded, there is little discussion in this area. The deficits begin with important elements left out: no discussion of retention or connection to department goals. In addition, there is little analysis. In the paragraph about the increasing degrees awarded, it notes outreach efforts to high schools. But there is no mention of the AS-T degree, which would seem central to both attracting those to the degree and increasing transfer. Additionally, Supplemental Instruction and the Success Center get mentioned, but no analysis of how they are used or any measure of their impact. Finally, in the supplemental data section, though there is mention of the need for certain classes to serve STEM majors, there is no real data. In addition, since job market info is readily available, it seems more than an oversight not have included that information.

Response: See responses above in PART II, Student Success & Supplemental Data

Student Success: While the department might be construed to minimally meet the requirements in this area in that they have SLOs, done some assessment and had some faculty discussions , and there has been some revision of SLOs as well (and an example is included to document that), nevertheless, there are a number of significant weaknesses. First, the SLO graphic dropped in is not the correct graphic –instead of the SLO assessment grid, they have a screen shot of the VPI’s list of math SLO files. This lacks info about the SLOs and their assessment. In addition, though they have PLOs, they have not yet mapped to courses (this seems a pretty basic thing to have done by now) . In addition, the narrative seems to indicate some confusion about PLO mapping. And though this may be outside what the committee is able to comment on, the transfer and employment PLOs seem outside what can be academically assessed and thus not recommended as program outcomes. Finally, in terms of the core competencies, there is a statement that CCs are considered when revising SLOs; since there is no example, it is unclear how this is happening.

Response: See responses above in Part II, SLO & PLO sections.

Planning: The only trend identified is the demand for math courses to serve STEM, and the analysis is adequate, with discussion of changes in course offerings (including accelerated, short term courses). While STEM is the “800-pound gorilla” of trends for the program, the lack of any other trends identified and analyzed is inadequate. Undoubtedly, there are other important trends affecting the department, its courses and students because they are trends affecting all departments: budget, enrollment, transfer, pedagogical change, the TMC and transfer degree, etc. In addition, the report mentions things elsewhere that indicate other trends. The creation of a Business Calculus and Finite Math course mentioned elsewhere must be in response to outside trends –what are they?. Planning is a key element for programs, and it seems like this program has not thought through this element of planning in a comprehensive way. Because this area was one of the previous DNMs, it is disappointing that the discussion in this area was not more thorough and comprehensive.

Response: See Responses above in PART II Student Success & PART I Pattern of Service.