



2018-19 Program Review – Instructional

Program Overview

Please verify the mission statement for your program. If there is no mission statement listed, please add it here.

Our mission in the Berkeley City College Mathematics Department is to ensure that every student graduates, transfers or progresses into a career as a disciplined, literate and ethical individual, proficient at using mathematics and quantitative reasoning appropriately to analyze and solve complex problems in the real world.

List your Faculty and/or Staff

Full Time:
Claudia Abadia, Salvador García, Shawn McDougal ,Mark Rinker, Michael Orkin, Kelly Pernell, Rick Wing and Dmitriy Zhiv
Part time:
Naima Azgui, Lloyd Bland, Elisabeth Chemouni, Christopher Doi, Arash Farahmand, Latha Gopinath, Lev Komraz, Fan Ching Kuo, Quynh Nhu Lamha, Daniel Najjar, Boris Polischuk, David Powell, Yevgeny Russakovski, Gaston Sanchez Trujillo, Luis Shein, Preston Smith, Winston Teitler, Mei Tsai, Michael Valdez, Chunfang (Kacie) Zhang

The Program Goals below are from your most recent Program Review or APU. If none are listed, please add your most recent program goals. Then, indicate the status of this goal, and which College and District goal your program goal aligns to. If your goal has been completed, please answer the follow up question regarding how you measured the achievement of this goal.

The Math Department has adopted the college's goal:
Raise College Competence: Raise student skills and competencies, and expand their learning experiences, so that they can successfully complete their college program.
This goal aligns with PCCD District Goals:
Goal 1: Promote Equity
Goal 3: Offer Students the highest quality curriculum and services

Status Update:
Department faculty are working with administrators, the Learning Resources Center, and students on developing a tutor training program.
The department has recently developed three support classes for Math 13 Intro to Statistics, Math 1 Pre-Calculus, and math 50 Trigonometry to prepare for implementing new state Legislation AB 705. All three support classes have been submitted and approved by the state.
The department is working on developing a self-guided placement tool for students and counselors to assist with AB 705 implementation and Guided Pathways.

Describe your current utilization of facilities, including labs and other space

The Math department occupies office space in rooms 353 and 355. Another full time faculty member shares an office with two non Math faculty members in room. Most part time Math faculty members' also use room 355 for their office hours, other use room 112 located in the Learning Resources Center. Four full time faculty members use room 353. Three full time faculty members and eighteen part time faculty members use room 355.

The Math Lab class is room 321. The Math department has a laptop cart and storage in this classroom. Room 322 also has an additional laptop cart for Math department use.

Enrollment Trends



Enrollment Trends Power BI dashboard

Note: Please consider the most recent 3 years when answering the questions below.

Set the filters above to your discipline, and discuss enrollment trends over the past three years

Overall the enrollment trend in the district is that enrollment has gone down, The BCC Math department has the second highest productivity consistently. The productivity in Math on average higher than BCC overall productivity.

Set the filter above to consider whether the time of day each course is offered meets the needs of students.

Academic Year	Census (Day Classes)	Productivity
2017-18	3688	17.57
2016-17	3562	19.38
2015-16	3965	19.17

Academic Year	Census (Evening Classes)	Productivity
2017-18	987	16.32
2016-17	875	17.45
2015-16	963	16.4

Due to the fact that productivity in Math classes is higher than the college average the time of course offering does meet student needs.

Are courses scheduled in a manner that meets student needs and demands? How do you know?

Courses that are high in demand (Pre-Calculus and Statistics) are scheduled in the mornings, afternoons and evenings. The majority of our classes are well enrolled. The sciences and the education department are consulted about course offerings to ensure that most scheduling conflicts are not created for students.

Describe effective and innovative teaching strategies used by faculty to increase student learning and engagement.

Some instructors formed a community of practice around student centered learning that focused on Pre-Statistics and Statistics. The community of practice developed a workbook of student activities for the classes that used the OLI textbook. Some instructors participated in Bridging the Gap and in the BSSOT (Basic Skills Student Outcome Transformation) grant. Another community of practice was formed the development of Math 230(a combined elementary and intermediate algebra class), however the class deemed to be unsuccessful as the completion rate was too low. The class will be superseded by the new support course being developed for Statistics, Trigonometry and Pre-Calculus to be in compliance with AB705 which is a new state law mandating changes in our curriculum. These changes go into effect Fall 2019.

How is technology used by the discipline, department?

Math faculty use technology in different ways in their classes. Some use Canvas and the OLI textbook and materials for statistics. Others use Web Assign or Pearson My Lab and Mastering. Some faculty members share their notes via Google drive, others use an iPad or a document camera in class to project their notes, and then save or scan their notes in pdf format to upload to Canvas or their web page.

Some faculty members that teach statistics require students to purchase a Ti-84 graphing calculator that comes preloaded with programs for statistics.

How does the discipline, department, or program maintain the integrity and consistency of academic standards with all methods of delivery, including face to face, hybrid, and Distance Education courses?

All instructors attempt to teach to the course outline of record. Informal consultation and collaboration occurs when instructors discuss with each other what is necessary for a student to be well prepared for the subsequent Math class.

Curriculum

Please review your course outlines of record in CurricUNet Meta to determine if they have been updated or deactivated in the past three years. Specify when your department will update each one, within the next three years.

All course outlines are up to date, the oldest COR being 16B approved January 2017. We plan on deactivating Math 250 and Math 250 in order to be AB 705 compliant.

CurriQunet Meta

Please summarize the Discipline, Department or program of study plans for curriculum plans for improvement. Below, please provide details for individual course improvement. Add plans for new courses here.

For Math 201 the action plan is to inform all instructors that will teach Math 1, Math 13, Math 50, Math 213, Math 215, and Math 216 about the aggregated results for each SLO.
For Math 253 the action plan is to inform all instructors that will teach Math 203 and Math 13 about the aggregated results of each SLO.
For Math 206 the action plan is to inform instructors that will teach Math 13 about the aggregated results for each SLO.

For Math 202 the action is to inform instructors that will teach Math 1, Math 50 and Math 216 about the aggregated results for each SLO.
The action plan for Math 203 requires the creation of a committee to discuss their action plan.

Assessment – Instructional

Student Learning Outcomes Assessment

List your Student Learning Outcomes

- Representation:
Represent relevant information in various mathematical or algorithmic forms. (conversion of words to mathematical symbols and graphs)
- Calculation:
Calculate accurately and comprehensively.
- Interpretation:
Interpret information presented in mathematical or algorithmic forms. (for example, interpretations of equations, graphs, diagrams, tables)
- Application/Analysis:
Draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis. (problem solving)
- Communication:
Explain quantitative evidence and analysis. (conversion of mathematical symbols and graphs to words)

Were there any obstacles experienced during assessment? What worked well? (Mainly based on evidence in the report, attach other evidence as necessary)

The Math Department supports SLO assessment and overall very cooperative. There were no major obstacles during assessments. A minor obstacle was getting full faculty participation. In round 4 of the assessment cycle the department changed all SLO tests and learning outcomes and will be able to answer what worked well during round 5

What percent of your programs have been assessed? (mainly based on evidence in the report, attach other evidence as necessary; note: a complete program assessment means all Program Learning Outcomes (PLOs) have been assessed for that program)

During round 3 we assessed 100 % of SLOs.

How has your dept worked together on assessment (planning together)? Describe how your dept works well on assessment? Describe things that went well or obstacles. What aspects of assessment work went especially well in your department and what improvements are most needed?

All SLO tests are discussed and approved at our department meetings before the start of the next round. Instructors report their result in a timely manner (usually a week after final exams) to SLO Math. Department liaison Dmitriy Zhiv. He aggregates the results in a timely matter and offers action plan for each SLO and each class. This discussed, amended and approved at our department meeting. In some cases the department creates a committee to further amend them.

Collaboration

The majority of the department collaborates in SLO assessment. Occasionally one or two adjunct instructors fail to participate in SLO assessment.

Leadership Roles

Claudia Abadia Math, Instructor BCC Math Department Chair
Kelly Pernell Math, Instructor BCC Academic Senate President
Dmitriy Zhiv Math, Instructor BCC Math Department SLO Liaison

Planning Process

The SLO assessment schedule is made by Dmitriy Zhiv. The schedule is created a year in advance. It is discussed and approved at the Math department meeting during the Fall semester professional development days. The Math department has not deviated from the approved schedule. The Math department moves through a three year cycle in assessing the SLOs for all of its courses.

Dept meetings for Collaboration

Meetings occur during the college professional development days prior to the start of the semester. There is also a department meeting during the mid-semester professional development day.

Data Analysis

The data collected on round 3 showed that we should change all SLO statements and SLO tests for effective evaluation and better fitting to the current ILOs of BCC. Additional data will be collected and discussed during the current round 4 SLO assessment.

What were the most important things your department learned from assessment? Did implementation of your action plans result in better student learning? In other words, how has your department used the results of assessment to improve student learning and/or curriculum? Please be as detailed as possible.

From previous assessments we learned that we should change all SLO statements and SLO tests for effective evaluation and better fit to the current ILOs of BCC

Does your department participate in the assessment of multidisciplinary programs? If Yes, Describe your department's participation and what you learned from the assessment of the program that was applicable to your own discipline.

N/A

Does your department participate in your college's Institutional Learning Outcomes (ILOs) assessment? If Yes, Please describe your departments participation in assessing Institutional Learning Outcomes.

The Math department actively collaborates with institutional assessment and changed all SLO statements to better fit to BCC's ILOs

What support does your department need from administrators, assessment coordinators and/or your campus assessment committee to continue to make progress in assessment of outcomes and implementation of action plans?

Stipends for adjunct faculty to help in entering SLO assessment data in Curricunet.

A classified position in Math that would help with:

- 1) Input SLO results in Curricunet
- 2) Assist with delivery and collection of SLO exams and results.
- 3) Work directly with the Math department in establishing and implementing the SLO assessment schedule

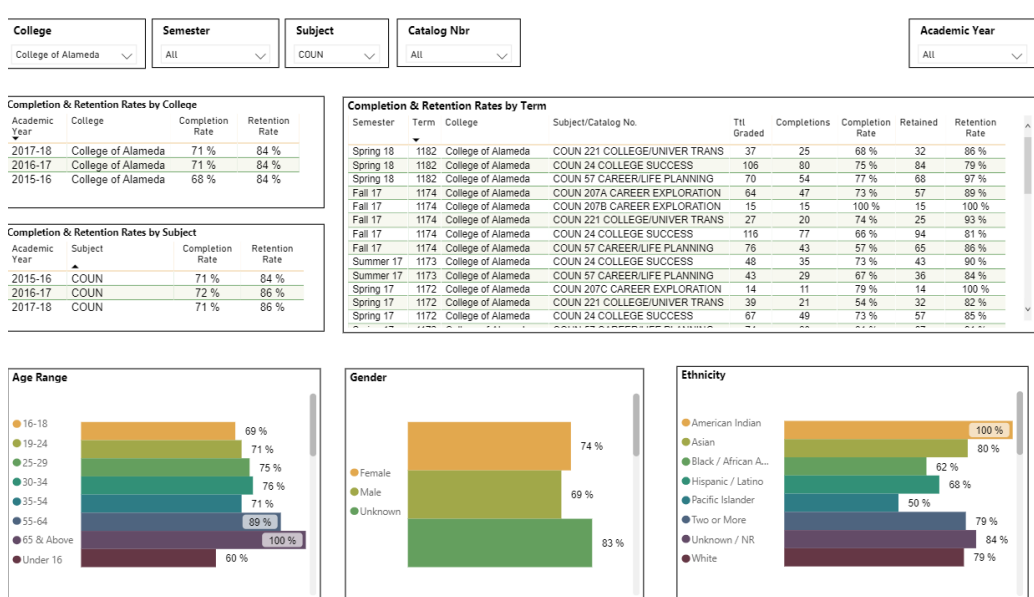
- 4) Keeping records pertaining to SLO activities in the Department.
- 5) Perform other duties as assigned by Math. Department SLO Liaison and Math. Department Chair

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Course Completion



Course Completion Power BI Dashboard

Consider your course completion rates over the past three years (% of student who earned a grade of "C" or better).

Use the filters on the top and right of the graphs to disaggregate your program or discipline data. When disaggregated, are there any groups whose course completion rate falls more than 3% points below the discipline average? If so, indicate yes and explain what your department is doing to address the disproportionate impact for the group.

Age

Age Range	Completion Rate
15 or younger	89%
16-19	61%
19-24	56%
25-29	57%
30-34	67%
35-54	56%
55-64	49%
65 & Above	43%

The average completion rate for the Math department is 57%. Most age ranges fall within plus or minus 3% with the exception of the age ranges of 15 or younger, 30-34, 55-64 and 65 and above. Out of 4766 students that were graded these two age ranges of 55-64 and 65 and above make 1% of the total grades. This is fairly insignificant considering the small number of students in these categories.

Ethnicity

Ethnicity	Completion Rate
American Indian	56%
Asian	67%
Black/African American	45%
Hispanic/Latino	48%
Pacific Islander	69%
Two or More	55%
Unknown	69%
White	65%

Disaggregating completion rates reveals a striking and consistent disparity between Asian students and Black/African American and Hispanic students. Fall 2019 the Math department will piloting support courses for Pre-Calculus, Statistics and Trigonometry. The intention of these support courses is to increase success rates and completion rates in these courses as mandated by the state. Math will also have a few sections that will be linked to learning communities like Umoja. The support that learning community students receive will help improve completion rates.

Gender

Gender	Completion Rates
Unknown	61%
Female	59%
Male	56%

Completion rates by gender fall close to the Math department's average of 57%.

Foster Youth Status

Academic Year	No of students	Completion Rate
2017-18	29	39%
2016-17	29	43%
2015-16	42	41%

The completion rates for Foster Youth falls considerably below the department average of 57%. Foster Youth student need to be directed into some type of support program. Most Foster Youth students do not self-identify to their instructors.

Disability Status

Academic Year	No of students	Completion Rate
2017-18	181	49%
2016-17	187	54%
2015-16	201	50%

The completion rate for DSPS is lower than the Math department average of 57%. The Math department needs to reach out to DSPS for professional development regarding strategies on how to help DSPS students in Math.

Low Income Status

Academic Year	No of students	Completion Rate
2017-18	2354	54%
2016-17	2617	52%
2015-16	2960	50%

The completion rate for low income students has slowly increased. The Math department has made an effort to use low-cost or no-cost text books.

Veteran Status

Academic Year	No of students	Completion Rate
2017-18	43	57%
2016-17	68	55%
2015-16	87	60%

The completion rate for Veterans falls close to the Math department's average of 57%.

Consider your course completion rates over the past three years by mode of instruction. What do you observe?

Face-to-Face

Academic Year	No of students	Completion Rate
2017-18	3171	58%
2016-17	3309	58%
2015-16	3383	57%

Face to face course completion rates are very close to Math department average of 57% even though the number of students has slightly decreased.

Hybrid

Academic Year	No of students	Completion Rate
2017-18	627	51%
2016-17	585	44%
2015-16	625	44%

Hybrid class completion rates are lower than the Math department average of 57% note that they are increasing.

100% Online

Academic Year	No of students	Completion Rate
2017-18	NA	NA
2016-17	35	30%
2015-16	220	35%

As a result of the dismal completion rates in 100% online Math classes the Math department decided to temporarily not offer 100% online classes.

Dual Enrollment

Academic Year	No of students	Completion Rate
2017-18	2019	80%
2016-17	1663	82%
2015-16	646	83%

Dual enrollment completion rates in Math have been above 80% for the last three years.

Day time

Academic Year	No of students	Completion Rate
2017-18	2854	58%
2016-17	2965	57%
2015-16	3115	57%

Daytime course completion rates are close to the department average rate of 57%.

Evening

Academic Year	No of students	Completion Rate
2017-18	1049	55%
2016-17	1122	54%
2015-16	1218	47%

The completion rates for evening students have improved over the last three years even though the number of students to complete their courses has decreased. The completion rate for evening students is approaching the Math department average of 57%.

How do the course completion rates for your program or discipline compare to your college's Institution-Set Standard for course completion?

BCC's average completion rate is 66%. The Math department's average completion rate is 57%. Even though the BCC completion rate is higher than the Math department's completion rate, it should be noted that Math is not a soft subject and students are required to learn the requisite material before moving on to the next class. It is important that BCC's Math department maintain standards at all times.

How do the department's Hybrid course completion rates compare to the college course completion standard?

The Math department's completion rate of hybrid classes is lower than BCC's average completion rate. Out of sixty sections the department only offers four or five hybrid sections.

Are there differences in course completion rates between face to face and Distance Education/hybrid courses? If so, how does the discipline, department or program deal with this situation? How do you assess the overall effectiveness of Distance Education/hybrid course?

The completion rates of 100% online classes significantly differ from the department average. As a result the Math department made the decision to not offer 100% online classes. Faculty are also encouraged to use Starfish for early alert in all their classes.

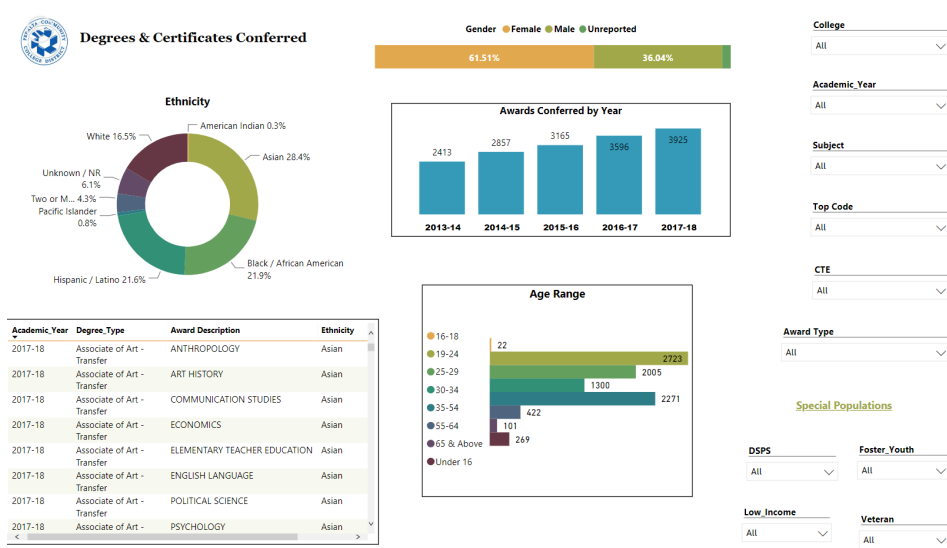
Describe the course retention rates over the last three years. If your college has an Institution-Set Standard for course retention, how does your program or discipline course retention rates compare to the standard?

The course retention rates in the Math department have slowly increased over the past three years.

What has the discipline, department, or program done to improve course completion and retention rates?

Basic skills Math classes and Statistics classes have embedded tutors in the class and also offer group tutoring. Students are continually referred to the LRC for individual and group tutoring.

Degrees & Certificates Conferred



Degrees & Certificates Power BI dashboard

What has the discipline, department, or program done to improve the number of degrees and certificates awarded? Include the number of degrees and certificates awarded by year, for the past three years.

Academic Year	No of degrees
2017-18	26
2016-17	22
2015-16	20

The Math department has increased its course offering to include all levels of Math including the entire Calculus sequence.

Over the next 3 years, will you be focusing on increasing the number of degrees and certificates awarded?

Over the next three years the Math department will attempt to increase the number of stem degrees awarded. But at the same time the department must focus on implementing AB705 which is a state mandate resulting in a total realignment of BCC's basic skills Math program.

What is planned for the next 3 years to increase the number of certificates and degrees awarded?

The BCC Math department will continue to increase its offerings of the Calculus sequence (Math 3A-Math 3F) as the need arises.

Engagement

Discuss how faculty and staff have engaged in institutional efforts such as committees, presentations, and departmental activities. Please list the committees that full-time faculty participate in.

Shawn McDougal- Professional Development Committee
Kelly Pernell-RoundTable, Academic Senate, Integrated Planning/Education Committee, Technology Committee, Curriculum Committee, TRC Member
Claudia Abadia-Academic Senate, Department Chair Council, TRC Member
Rick Wing-TRC Member
Mark Rinker- Support Course Community of Practice
Michael Orkin- Developing a Hybrid Statistics class
Salvador Garcia
Dmitrit Zhiv- PIE Committee

Discuss how faculty and staff have engaged in community activities, partnerships and/or collaborations.

Support Courses CoP
Tutoring CoP
BSSOT
BTG
Michael Orkin is on Board of Trustees of Lincoln University. He routinely appears on radio and TV to discuss statistics relative to lottery odds.
In the future elementary or basic skill Math classes may be offered at the Adult School as part of concurrent enrollment and as a solution to help students who are not at the level of the support courses (Pre-Calculus, Statistics or Trigonometry)..

Discuss how adjunct faculty members are included in departmental training, discussions, and decision-making.

Adjunct faculty members are encouraged to participate in departmental activities and training. They are encouraged to take on leadership roles in the department.

Prioritized Resource Requests Summary

In the boxes below, please add resource requests for your program. If there are no resource requested, leave the boxes blank.

Resource Category	Description/Justification	Estimated Annual Salary Costs	Estimated Annual Benefits Costs	Total Estimated Cost
Personnel: Classified Staff	Help with Math department projects, LRC coordination, Math web site maintenance and student OER resources			Need assistance from Dean or VPI
Personnel: Student Worker	Embedded tutors for new support courses and other courses			Need assistance from Dean or VPI
Personnel: Part Time Faculty	A dedicated counselor (5-10 hours a week) focused on helping students in support classes that would result in more collaboration with student services for students required to take the support courses.			Need assistance from Dean or VPI
Personnel: Full Time Faculty	A dedicated counselor (5-10 hours a week) focused on helping students in support classes that would result in more collaboration with student services for students required to take the support courses			Need assistance from Dean or VPI

Resource Category	Description/Justification	Total Estimated Cost
Professional Development: Department wide PD needed	Faculty Stipends for : AB705 implementation Guided Pathways Developing non-credit courses to be offered at the Adult school.	\$500 stipend per faculty member
Professional Development: Personal/Individual PD needed	Retraining in Statistics	\$500 stipend per faculty member

Resource Category	Description/Justification	Total Estimated Cost
Supplies: Software		
Supplies: Books, Magazines, and/or Periodicals		
Supplies: Instructional Supplies	Classroom set of TI84 Plus CE graphing calculators (30 calculators with charging station and cables)	\$4500
Supplies: Non-Instructional Supplies		
Supplies: Library Collections		

Prioritized Resource Requests Summary - Continued

Resource Category	Description/Justification	Total Estimated Cost
Technology & Equipment: New		
Technology & Equipment: Replacement	<p>Replace desktop computers in room 353 and room 355 for Math department faculty.</p> <p>Update laptops for Math faculty,(consider purchasing Mac Book Pros)</p> <p>Toner cartridges for printer used by Math faculty in a year.</p>	<p>\$8,000</p> <p>\$13,000</p> <p>\$500</p>

Resource Category	Description/Justification	Total Estimated Cost
Facilities: Classrooms	Classroom analysis to ensure that Math classes fit in their classroom. Also the department requests more permanent use of room 322 and permanent use of another classroom to store the new laptop cart and hold classes.	
Facilities: Offices	Dedicated office space is needed for adjunct faculty. Currently more than 12 part timers share one desk in room 355.	
Facilities: Labs		
Facilities: Other	In Classrooms 1,2,3 at 2000 Center St	

Prioritized Resource Requests Summary – Continued

Resource Category	Description/Justification	Total Estimated Cost
Library: Library materials		
Library: Library collections		

Resource Category	Description/Justification	Total Estimated Cost
OTHER	Food budget to continue tutor training sessions \$35 AMATYC membership to participate in the annual student mathlete competition	\$35