

2018-2019 Program Review Cycle



Instructional Programs

CAN Program Review (Instructional) - Mathematics (Odd Year)

Program Review Narratives

2018-2019

Instructional Program Review (IPR)

Lead Contact Person: Evan Innerst

Writing Team: Evan Innerst, Ray Lapuz, David Monarres, Po Tong

Executive Summary

0. Executive Summary: The math program has created two major pathways to accelerate students to through statistics or through the calculus sequence. With the passage of AB 705 we are creating three co-requisite classes for students who are placed in either statistics, business calculus, or the path to calculus.

The math department has been an integral part of the award-winning Math Jam program. With the advent of AB 705, the math faculty will help reshape Math Jam to continue its effectiveness.

Many of our faculty are also involved with a Community of Practice that highlights professional development in classroom teaching. These communities of practice, extended beyond the department and division, are led by math faculty.

Program Context

1. Mission: Mission statement:

The mission of the Cañada Mathematics department is to provide a foundation for a liberal arts education and for the study of the sciences. This is accomplished by providing students with a broad range of courses designed to develop basic skills in computation and quantitative reasoning, to meet the transfer requirements for colleges and universities, and to meet the needs of occupational training programs.

2. Articulation: Two years ago the math department replaced math 242 with math 243 so that students would not have to take trigonometry as a prerequisite. Like math 242, math 243 has been approved for CSU and UC transfer. It is now also approved for the Hass school of Business at UC Berkeley.

Research has shown that students are hurt by low placement. The math department continues to work on improving placement through the use of multiple measures (placement tests, high school grades, work at other schools, etc..)

AB 705 is going to change the way students are placed

3. Community & Labor Needs: Currently, we have embedded tutors in select gateway STEM courses that are funded through a grant. As we begin implementing the co-requisite courses, we will need to more embedded tutors in the classrooms.

The development of the co-requisite curricula also require more faculty attention. On top of the curriculum, many of our faculty are involved with professional development programs that are benefiting the campus. Since we are still far from the recommended full-time to part-time ratio, our department would greatly benefit from another full time faculty.

Looking Back

4. Curricular Changes: The major changes in our curriculum offerings will come from the implementation of the AB 705 requirements. We will have co-requisites in place for under prepared students who enroll in transfer level classes. We will be removing math 811, math 110, math 120, and math 190 as prerequisites for the transfer level classes. However we will still offer these classes as an option for students who wish to take them. We are unsure of how enrollments in all of these classes will be affected.

Some of our faculty have also used their professional development experiences to develop active learning lessons in their classes. Research has shown that these types of activities are more engaging and can facilitate deeper learning for students.

5A. Progress Report - IPC Feedback: The placement test (CAI) has been delayed for at least one year. As a temporary solution we have agreed to use ALEKS PPL as the assessment. We have also reached district wide consensus on the use of high school transcripts for placement in classes below transfer level and are near consensus on classes above transfer level.

The retention and success for the online classes matches that of the traditional classes. Many online students take advantage of the STEM center and tutoring, however it would be nice if the campus had a dedicated testing center where students could have

a quiet place to take tests.

We are reworking a plan for assessing the SLO's because we recently updated our course outlines. We need to come up with a plan to assess our PLOs as well. We have tried common assessments in some classes but most of our SLOs are assessed by the instructor teaching the class.

As co-chair of the ACES committee, Michael Hoffman is leading the campus-wide effort to focus on retention in classes particularly at the developmental level. A number of faculty from across disciplines as well as staff in student support services roles are working on projects to help retain our students and lead them to succeed.

5B. Progress Report - Prior Action Plans: The math department has participated in a number of professional development opportunities over the last year including participation in both campus-wide and statewide activities geared towards curriculum development and increasing student success.

Since 2013, Michael Hoffman has been involved with Reading Apprenticeship.

This past year Ray Lapuz and Po Tong were involved in California CAI (Common Assessment Initiative) and Multiple Measures Placements. Agreement on district wide new placement cut scores were reached. In addition, we also now have district wide consensus on the use of high school transcripts for the placement of students below transfer level.

Many of the faculty have been collaborating with the other math faculty from our sister colleges. We have met on several occasions, including the ASCCC AB 705 Summit at Skyline College where all the three colleges developed a plan to work on our curriculum.

The math department continues to work on its accelerated pathways. The math 190 group now shifts its focus to developing active learning lessons for the Math 800 course.

Ray Lapuz and Michael Hoffman have been trained and are leading the first Cañada College cohort of UC Berkeley's curriculum, Faculty Learning Program (FLP). Although FLP had been developed to improve teaching and learning in the STEM courses, the facilitators are extending the curriculum to extend to other divisions. In the current cohort, there are three math, six other STEM, two social science, and one business faculty. Other FLP are running at CSU East Bay and San Jose State with two math, two biology, and one CS faculty.

Ray Lapuz is the faculty lead for Math Jam. He has been involved with Math Jam since its inception in 2008. Now, he will be working with other math faculty to revamp the curriculum and the direction of the program to maximize its effectiveness.

6A. Impact of Resource Applications: N/A

6B. Impact of Staffing Changes: Denise Hum left to go to Skyline and was replaced by Sumathi Shankar.

Current State of the Program

7. Enrollment Trends: The mathematics department fill rate is down to 89.2% in 2017/2018 from a peak fill rate of 94.7% in 2016/2017. This fill rate is in line with prior years and still exceeds the overall school's rate of 81.5%. With the new pathways and co-requisite supports we hope to draw in more students.

8-A. Access & Completion: Three groups are showing large equity gaps in our program; Hispanic, African Americans and Pacific Islanders.

For Hispanic students there has been a 5.3% increase in completion rates for Hispanic students when compared to prior program review. Though this good news is tempered by an increase in the overall equity gap to 11.2% due to an even larger increase in overall completion rates.

Three other groups experiencing disproportionate impact would require a fewer number of completions to eliminate the gaps in Course Completion: We'd need 11 more African American students, 12 more Pacific Islander students and 5 more students of Unreported Gender to close the equity gaps in course completion.

To improve course completion rates for these groups, research suggests that instructors can employ a set of strategies focused on retaining them. First, the principle of "proactive" retention can help address the tendency for students who face cultural and social barriers to asking for help. Thus, if instructors do not wait for students to ask for help but, seek out the student to directly engage them or connect them to resources can help reduce the anxiety or social stigma related to help-seeking behavior (Wood, Harris III). The department needs more time to meet and discuss this.

Our program has led the movement on campus for the inclusion of stereotype threat and implicit bias into professional development activities in addition to overall improvements in pedagogy in key courses like Math 200 and Math 225. We believe that these changes in faculty focus should help to close these equity gaps.

Many of our math faculty members serve as mentors for our NSF scholars. The mentors provide one-on-one attention to the scholars, provide them with advice and encouragement. This is one of the many ways to narrow the achievement gaps of under served students.

The campus could provide a designated time for each department to discuss this data, along with publicized resources on best practices.

8-B. Completion - Success Online: When we look at all of our classes together success and retention rates are about 10% higher for classes that are not online over classes that are online, but when we compare the specific classes we teach online and their traditional counterparts the success and retention rates are the same.

In general, we continue to try and improve retention and success rates for all of our classes by getting students placed appropriately and providing support both before (Math Jam) and during the semester (tutoring).

9A. SLO Assessment - Compliance: We have created a 3 year plan to assess our SLOs and have been on schedule.

9B. SLO Assessment - Impact: The biggest changes have been made in the elementary and intermediate algebra sequences. Realizing that we needed more time to cover the key ideas we moved some topics into other classes. For example, the logarithm properties are needed by STEM majors, but not by the majority of students who take math 120, so we moved that topic to Pre-Calculus and the path to calculus where all of the STEM majors will see it.

10. PLO Assessment: We did not assess PLO's last year. This is something we need to take a look at.

We are planning to restructure our Program Level Learning Outcomes to match the diverse goals of our math students.

Looking Ahead

11. Program Planning: 1. Develop for the co-requisite courses.

* Develop curriculum that includes active learning strategies

* Implement an "embedded tutor" model to maximize the use of a peer tutor in the classrooms.

2. Continue to develop and institutionalize the Community of Practice model.

3. Revamp Math Jam.

Program Review Narrative Status: In Progress

Objective: Co-requisite Courses

Develop for the co-requisite courses for transferable courses to comply with AB705.

Objective Status: 2 - Continuing (PR)

Objective Year: 2019-2020

Estimated Start Date: 09/10/2018

Estimated Completion Date: 08/05/2019

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success

Action Plans

2018-2019 - Develop and submit the course outline of records for approval by the Curriculum Committee. (Active)

Who's Responsible for Completing this Action Plan?: Po Tong, Michael Hoffman, David Monarres, Sumathi Shankar

Estimated Completion Date: COR's for Math 800 and 841 are done.

COR for Math 825 will be submitted by 11/30/2018

2018-2019 - Develop Curriculum for Math 800. (co-requisite for Math 200) (Active)

Who's Responsible for Completing this Action Plan?: Michelle Beatty, David Monarres, Sumathi Shankar, Ray Lapuz

Estimated Completion Date: Before the beginning of the Fall 2019 semester.

2018-2019 - Develop Curriculum for Math 841. (co-requisite for Math 241) (Active)

Who's Responsible for Completing this Action Plan?: Whoever will be teaching Math 241 in the Fall 2019 semester.

Estimated Completion Date: Beginning of Fall 2019 semester.

CAN Program Review (Instructional) - Mathematics (Odd Year)

2018-2019 - Develop Curriculum for Math 825. (co-requisite for Math 225) (Active)

Who's Responsible for Completing this Action Plan?: Michael Hoffman, Po Tong, David Monarres

Estimated Completion Date: Beginning of Fall 2019 semester.

2018-2019 - Work with the Learning Center and the STEM Center to establish embedded tutors in the co-requisite courses. (Active)

Who's Responsible for Completing this Action Plan?: Ray Lapuz

Estimated Completion Date: Before Fall 2019

Resource Requests

Funds for embedded tutors - The co-requisite courses will implement active learning strategies and will need embedded tutors to be successful.

Type of Resource: Non-Instructional Personnel

Cost: 10000

Objective: Community of Practice

Continue to develop and institutionalize the Community of Practice model.

Objective Status: 2 - Continuing (PR)

Objective Year: 2020-2021

Estimated Start Date: 08/06/2018

Estimated Completion Date: 01/06/2020

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success

Action Plans

2018-2019 - Implement the Faculty Learning Program at Cañada. (Active)

Who's Responsible for Completing this Action Plan?: Ray Lapuz, Michael Hoffman

Estimated Completion Date: The first cohort will finish by the end of Spring 2019

2019-2020 - Redesign the program to transfer to CIETL. (Active)

Who's Responsible for Completing this Action Plan?: Ray Lapuz

Estimated Completion Date: The first Community of Practice cohort hosted by CIETL could begin in Fall 2019 or Spring 2020.

Objective: Revamp Math Jam

Examine and redevelop the curriculum for Math Jam.

Objective Status: 1 - New (PR)

Objective Year: 2020-2021

Estimated Start Date: 09/01/2018

Estimated Completion Date: 09/01/2019

Please select the college goals with which this objective aligns.: Student Completion/Success - Provide educational and student services programs that highlight inclusivity, diversity, and equity in their mission to help students meet their unique educational goals and minimize logistical and financial barriers to success.

CAN Program Review (Instructional) - Mathematics (Odd Year)

Please select the district goals with which this objective aligns.: District Goal #1 - Develop and Strengthen Educational Offerings, Interventions, and Support Programs that Increase Student Access & Success

Action Plans

2018-2019 - Present the Jams program to interested parties through an Open House. Solicit ideas and information to improve the Math Jam program. (Active)

Who's Responsible for Completing this Action Plan?: Ray lapuz

Estimated Completion Date: End of Fall 2018

2018-2019 - Develop improved curriculum with specific Learning Outcomes and Objectives. (Active)

Who's Responsible for Completing this Action Plan?: Ray Lapuz

Estimated Completion Date: End of Spring 2019