

Mathematics and Computer Science Department

2016-17 PIE Report Narrative

Unit Mission Statement:

The Mathematics and Computer Science program offers a broad curriculum to a diverse student population in a supportive learning environment. Courses are designed to improve foundational skills, vocational skills, and fulfill A.A., A.S., and transfer degree requirements. Students will gain analytical and logical thinking skills necessary for problem solving in business, social sciences, and STEM disciplines. The Mathematics and Computer Science program strives to assist students in achieving their educational goals.

Program Planning Dialog:

Converted our linear algebra and differential equations course (Math 285, 5 units) into two separate courses--linear algebra (Math 260, 3 units) and differential equations (Math 290, 4 units)--to meet the articulation needs of our students.

Initiated dialogue about the implementation of the use of high school transcripts to improve accuracy of placement in math courses based on the statewide Multiple Measures Assessment Project (MMAP). Faculty time to develop placement model would be required.

Established a Math Test Prep Lab in 16D. Continued discussion regarding using the Math Test Prep Lab as a support center for at-risk students and students wanting to place into higher courses. Topical workshops were discussed, which would require additional instructor time to organize and implement.

Discussed dual enrollment at West Covina High School and iPoly High School for 2017-18. Foreseeable issues include staffing, evaluation of faculty, scalability of model, and calendar inconsistencies between high schools and Mt. SAC.

Increased sections of Math 70S and Math 110S offered. Continued growth of this sequence will require training of additional faculty. Designated space in an easily accessible location is needed to organize and store course materials.

Proposed a Math 110 (Elementary Statistics) unit increase (from 3 to 4 units) to improve student success. Additional classroom space will be needed to accommodate extended hours.

Opposed the trade of a building 61 Math classroom (61-3311) for a classroom in building 11 (11-2115) to accommodate an expanding STEM Center. This will have a direct impact on our ability to serve our students at peak demand times and will decentralize the building 61 model. Started developing contextualized materials for Math 51 courses. Additional faculty time will be needed to support this project.

Implemented expansion of Bridge/Pathways programs as requested by college leadership. Offered additional sections to better serve students at a variety of times. There is a need for dedicated classrooms for these programs to overcome scheduling challenges.

Participated in the creation of Guided Pathways for the Math AS-T to give students a clear road-map to reach their goal in a two-year time frame.

Participated in the Educational and Facilities Master Planning Summit. Both Math and Computer Science faculty shared their ten-year visions for programs. Opportunities, challenges, and impact of programs on facilities for the Math and Computer Science department were shared with the facilitator.

Initiated discussions about corequisite models for potentially at-risk students. There will be a need for an additional computer lab facility and/or an additional CSCI lab in building 61.

Created mappings between Common Assessment competencies and prerequisites for math courses. Faculty training will be needed.

External Conditions, Trends, or Impacts (Instruction):

1. Decreasing demand for developmental math courses
2. Increasing demand for transfer-level math courses
3. Increasing demand for computer science courses
4. Increasing demand for CSCI 190 (including intersessions)
5. Growing statewide support for CAP (California Acceleration Project)
6. Growing statewide support for use of statewide MMAP (Multiple Measures Assessment Project) model--or variant of the MMAP model--for placing students

Internal Conditions, Trends, or Impacts (Instruction):

1. Total number of credit sections (Math + CS) reached 655 (Summer/Fall/Winter/Spring) for 2016-17, exceeding 2015-16 levels (615)
2. Total credit enrollment at census exceeded 2015-16 levels: In 2016-2017, 17,853 students were enrolled at the first census week, versus 17,165 students in 2015-16. Data from SSR0039-A.
3. Increase in total offerings from 233 in Fall 2015 to 245 in Fall 2016 while still holding high fill rates (85.9% Fall 2015 and 86.2% Fall 2016). Data from SSR0038-B.
4. Increase in total offerings from 243 in Spring 2016 to 253 in Spring 2017 while still holding high fill rates (83.8% Spring 2016 and 81.6% Spring 2017). Data from SSR0038-B.
5. Increase in total offerings from 69 in Summer 2016 to 76 in Summer 2017 while still holding high fill rates (75.7% Summer 2016 and 77.5% Summer 2017). Data from SSR0038-B.
6. Increase in total offerings from 70 in Winter 2016 to 80 in Winter 2017 while still holding high fill rates (83.2% Winter 2016 and 79% Winter 2017). Data from SSR0038-B.

Critical Decisions:

1. Decision by Natural Sciences Division to trade a building 61 Math classroom (61-3311) for a classroom in building 11 (11-2115) to accommodate an expanding STEM Center.
2. Decision by administration to participate in dual enrollment programs at West Covina High School and iPoly.
3. Decision by administration to increase student enrollment.
4. Decision by administration to expand Bridge and Pathways program.
5. Decision by state to support CAP.
6. Decision by department to create an ALEKS student support lab in 16D.

Progress on Outcomes Assessment:

1. All math and computer science courses have at least two SLOs created and posted on department website.
2. The mathematics degree, AS-T Mathematics (S0333), has six program-level SLOs created and posted on college website.
3. Math courses have assessed, evaluated, and created use of results for at least two SLOs.
4. CSCI courses have assessed, evaluated, and created use of results for at least two SLOs.
5. Implementation of use of results is a work in progress.

Notable Achievements for Theme A: To Advance Academic Excellence and Student Achievement:

1. President's Award Excellence Innovation in Teaching and Learning (Outstanding Basic Skills Effort) presented to Statway implementation team: Scott Guth, Paula Young, and Akira Nitta.
2. Three teams participated in the ACM (Association for Computer Machinery) programming competition receiving 4th and 5th place, with more than 40 teams competing.
3. Participated in the AMATYC Student Mathematics League (a national math competition).
4. Baochi Nguyen was the recipient of the "Inspiring Women of Mt. SAC" award.
5. Participated in the Putnam Math Competition.
6. Hosted Integration and Factoring Rallies each semester. Over 100 Mt. SAC math students participated in these competitions.
7. Participated in Dr. Deborah Boroch Discovery Day.
8. Math/Computer Science students were selected as recipients for this year's Math & Computer Science Scholarship.
9. Tim Takashima awarded HMT Memorial Scholarships to hard-working students in need.

Notable Achievements for Theme B: To Support Student Access and Success:

1. In response to increased demand for Calculus sequence, six additional Calculus courses were offered.
2. In response to increased demand for Statistics, fifteen additional Statistics courses were offered (Math 110/110S).
3. In response to increased demand for math courses and lack of support for additional full-time hires, seventeen new faculty were added to the adjunct pool.
4. In response to increased demand for CSCI courses, an adjunct pool for CSCI was formed. Two new adjunct and one existing math adjunct faculty were placed in this new pool.

Notable Achievements for Theme D: To Foster an Atmosphere of Cooperation and Collaboration:

1. The MARC, TMARC, and Computer Lab in building 61 continue to serve, support, and assist student collaborative learning. These facilities continue to be in high demand and maximize capacity during peak hours of operation.
2. The centralized math program in building 61 continues to foster student-to-student, student-to-faculty, and faculty-to-faculty communication, cooperation, and collaboration.