

Mathematics

2019 Program Review

MJC Program Review 2019

Modesto Junior College's Program Review process is divided into 3 sections:

- Program Analysis (SWOT Analysis)
- Goal Setting and Activities
- Resource Request

Program Analysis

Internal Strengths

1. What strengths does the analysis of student data reveal?

Increasing trend in Math program awards. Significant increase in Math program completers.

2. Are there specific aspects of the program that are exemplary or could serve as a model?

84% retention rate is remarkable. The gender gap in Math is virtually zero.

3. What do others see as the program's strengths?

Doubling of program awards over two years. The Math program is an innovator in offering noncredit courses for underprepared students. The Math department habitually completes administrative and governance tasks rapidly and well ahead of due dates. The Math department is highly efficient in terms of both FTES/Faculty and FTES/Resource ratios.

4. How well are students meeting program learning outcomes, skills, or competencies; and how are they relevant to careers in your discipline or industries for which you help prepare students?

Overall 83% of students meeting the program learning outcomes is a significant accomplishment. Program completers meet problems solving learning outcomes at a 74% rate and communication learning outcomes at a 72% rate.

Internal Weaknesses

5. What gaps are observed by reviewing the student data?

There are minor gaps between the results for the problem solving learning outcome and the communication learning outcome, especially for African American students.

6. What disproportionate gaps need to be addressed?

There is a significant gap between the performance of African American students (67%) and the population overall (83%). African American students also have a larger gap between the problem solving learning outcome (70%) and the communication learning outcome (61%) than other groups.

7. What are areas in which the program could improve? (curriculum, scheduling, modality, other?)

The largest potential benefit would come from broadening program review to cover General Education courses the Math Department offers instead of just courses that relate to our program award. The Math Department serves vastly more students in G.E. courses than in our major.

8. Where are there gaps in the program on how students are meeting learning outcomes, skills, or competencies?

Students are being more successful in achieving the problem solving learning outcome than the communication learning outcome

External Opportunities

9. Where are potential opportunities for expansion, improvement, or new program development?

Tutoring can be significantly improved by reestablishing a tutoring liaison position. Partnerships with high schools (such as through the CAPP grant) could be expanded. Corequisite courses could be improved by supporting faculty coordinators. MJC could benefit from establishing and supporting a M.E.S.A. program. Partnerships with local businesses and grants could help reestablish an engineering program. Conference attendance and site visits can continue to be a source of innovative ideas.

10. What are some industry or disciplinary trends that could enhance the program?

Classroom use of computer-based methods. Data science investigations and analysis. Online tutoring. Modernized laptops and classroom equipment to keep pace with industry expectations. Supplemental Instruction support in corequisite classes.

External Threats

11. How are changing resources, technology, employer, or transfer requirements affecting the program's ability to serve students?

Lack of access to CALPASS or similar student preparation data presents a substantial challenge to scheduling the proper number of various classes. The shortage of full time Math faculty commensurate with the number of students at MJC presents a bottleneck for student achievement of all program awards. Sparse support for tutoring services reduces student access to a necessary resource. Continuing shortage of promised student data, such as GPA and terminal math course and grade, prevents an intelligent response to student needs.

12. What are some current industry or disciplinary trends that could have a negative impact on the program?

AB 705s artless and rapid overhaul of curriculum. Expanding number of majors requiring elementary statistics from the math department instead of from other departments.

13. What other obstacles does the program face?

Lack of math majors in the Central Valley. Lack of potential math adjunct professors in the Central Valley. Lack of an engineering program at MJC drives high achieving students to go elsewhere. Insufficient resources devoted to tutoring reduces the ability for students to get tutors and the ability for tutoring to develop innovative techniques. Insufficient resources supporting classroom technology.

Goal Setting and Activities

Goals

Program Goal	Mission Alignment	Area of Focus
Reduce size of math class wait lists so that students can complete degrees in a timely manner as required by AB 705.	Equity	Program Design
Reduce equity gaps.	Equity	Pedagogy
Increase success rates.	Equity	Student Support

Activities

Activities	In Support of Goal #	Outcome or Deliverable
Analyze data provided by the administration.	Goal #2	Direct new curricular innovations.
Meet with local H.S. faculty.	Goal #3	Improve placement for entering students.
Re-establish math tutoring class and liaise with tutoring center.	Goal #2	Improve tutor skills and coordination between tutors and faculty.

Research and implement strategies to increase completion rates.	Goal #3	Increased completion rates.
Meet median math faculty/FTES ratio for local area.	Goal #1	Reduce math class wait lists and hasten student graduation.

Resource Requests

Category	Request	Activity #	Estimated Cost
Prof. Devel.	Conference attendance.	4	20000
Prof. Devel.	Site visits.	2	10000
Prof. Devel.	Host discipline experts.	4	5000
Equipment	Upgrade smart classrooms.	4	100000
Technology	Faculty presentation tablet computers.	4	30000
Technology	300 Graphing Calculators.	4	30000
Personnel	Hire more full time math faculty to reach median for the local area.(x6)	5	100000
Personnel	S.I.+ leaders for co-requisite classes.	3	NA
Facilities	More classrooms commensurate with hiring.	5	NA
Facilities	Math class access to computer labs.	4	NA
Other	Student placement-related H.S. data.	1	0
Other	Stipend or reassign time for tutoring liaison.	3	5000