2016-2017 Instructional Program Review Annual Update

1. Discipline/Area Name: **MATHEMATICS: MSE**	For: **2016-2017**

2. Name of person leading this review: Tooraj Gordi

3. Names of all participants in this review: Snizhana Bowers, Roberto, Diaz, James Dorn, Tooraj Gordi

4. Status Quo option: Year 1: Comprehensive review ☐ Year 2: Annual update or status quo option ☐ Year 3: Annual update ☒ Year 4: Annual update or status quo option ☐	In years two and four of the review cycle, programs may determine that the program review conducted in the previous year will guide program and district planning for another year. ☐ Check here to indicate that the program review report written last year accurately reflects program planning for the current academic year. (Only programs with no updates or changes may exercise the status quo option. All others will respond to questions 6 – 13.)

Number of Full-time Faculty | 17 | **Number of Part-time Faculty** | 34

Data/Outcome Analysis and Use

5. **Please review the subject level data and comment on trends (data is available on the Program Review web page):**

Indicator	2012-2013	2013-2014	2014-2015	2015-2016	Recent trends?	Comment
Enrollment #	12011	12761	13442	14058	Increase	A 15% increase since 2012-13
# of Sections offered	387	417	387	499	Increase	
# of Online Sections offered	29	29	31	31	No Change	
# of Face-to-Face Sections offered	358	388	356	468	Increase	
# of Sections offered in Lancaster	307	364	334	444	Increase	A significant increase in courses leading to Calculus, due to the new STEM path. More MATH 001 are being offered due to its demand and department promotion of the course.
# of Sections in other locations	80	53	53	50	No Change	
# of Certificates awarded	NA	NA	NA	NA		
# of Degrees awarded	15	24	14	25	Increase	

Subject Success Rates	64%	57%	56%	57%	No Change	
Subject Retention Rates	85%	83%	81%	83%	No Change	
Full-time Load (Full-Time FTEF)	17.38	17.27	16.52	17.44	No Change	
Part-time Load (Part-time FTEF)	14.18	14.52	16.76	18.36	Increase	
PT/FT FTEF Ratio	0.82	0.84	1.01	1.05	Increase	

#	Indicator	Comments and Trend Analysis
7.	If applicable, report program/area data showing the quantity of services provided over the past four years (e.g. # of workshops or events offered, ed.plans developed, students served)	MATH 001 (former 099) is producing high results since its inception (redesigned) in fall 2015. As of spring 2016 the success rates for MATH 65, 70, and 102 under MATH 001 umbrella are 77%, 73% and 80% respectively. The Calculus Path that was introduced in Fall 2015 (planned in Aug. 2014) provides a focused path for STEM students. The path clearly identifies courses students need to take on their way to a four-year school.
8.	Student success and retention rates by equity groups within discipline	Review and interpret the subject data by race/ethnicity and gender. Identify achievement gaps. List actions that are planned to meet the Institutional Standard of **69.1%** for student success and to close achievement gaps: The mathematics Department provides service to all AVC students. However, the success rate for black students is at a 46% low while White and Hispanic students enjoy the higher rates of 67% and 57% respectively. No disparities of gender success and retention are obvious. The rates are at about 58% (success) and 83% (retention).
9.	Career Technical Education (CTE) programs: Review the labor market data on the California Employment Development Department website for jobs related to your discipline.	N/A

10. Cite examples of using action plans (for SLOs, PLOs, OOs, ILOs) as the basis for resource requests and how the allocation of those resources or other changes resulted in improved outcomes over the past four years.

SLO/PLO/OO/ILO	Action Plan	Current Status	Impact of Action
	STEM Pathway	**Ongoing**	As indicated in the Comprehensive Program Review, the new STEM pathway was implemented in the fall 2015 semester. It has sharply divided STEM and non-STEM students and generated greater demands in the areas of Geometry and Proof and Trigonometry. As a result, the number of sections in MATH 105 (Geometry and Methods of Proof), MATH 135 (Trigonometry), and MATH 140 (Pre-Calculus) has

			increased.
	Increased the number of MATH 001 sections	**Ongoing**	Student enrollment in MATH 001 has increased and will continue to increase as students are turned away by class size restrictions or deadline enforcement imposed on the traditional sections.
	Expansion of MATH 001	Completed	Classroom remodeling planned last year is completed. The new room design requires more man power. There is an urgent need for in-class tutors and a full time lab assistant.
	MATH 116	**Completed**	The new course Statistics Using R will be offered for the first time in fall 2017 semester.

11. Review the goals identified in your most recent comprehensive self-study report and any subsequent annual reports. Briefly discuss your progress in achieving those goals.

Goals/Objectives	Current Status	Impact of Action (describe any relevant measures/data used to evaluate the impact)
Pathways	Ongoing	Recent department data shows that about 86% of students enrolled in Math classes are not STEM majors. Discussions among the math faculty determine the future direction of the department.
In-class Technology	Ongoing	• There have requests from several faculty to add interactive white boards to our classrooms. • There has also been a request to purchase or renew the license for math software Mathematica. The software will allow working with real life data in all of our Calculus and beyond courses. It will enhance both teaching and learning of mathematical sciences.
STEM Summer Bridge program	Completed	The program was designed for high school seniors who are incoming freshmen to brush up their math skills and being able to re-assess into higher level math class. The length of the program has decreased from 6 weeks to 4 weeks the last 2 years of the program. Four math instructors in total participated. The curriculum was designed based on the Course Outcome of Record for Basic Math, Elementary and Intermediate Algebra. The number of students served grew from 14 to 50 in 4 years. The outcome of the program increased from 14% of students being able to reassess at least one level higher in their math sequence in the first year to 80% in the fourth year (!).
Briefly discuss your progress in achieving those goals: Discussion has started among math faculty for the past several months to review the math curriculum for possible revision.		
Please describe how resources provided in support of previous program review contributed to program improvements: The summer bridge program was sponsored by STEM Grant for four years (2013-16).		

12. Based on data analysis, outcomes, program indicators, assessment and summaries, list discipline/area goals and objectives to advancing district Strategic Goals, improving outcome findings and/or increasing the completion rate of courses, certificates, degrees and transfer requirements in 2018-2019. Discipline/area goals must be guided by **district Strategic Goals** in the Educational Master Plan (EMP), p.90. They **must be supported by an outcome or other reason (e.g., health and safety, data analysis, national or professional standards, a requirement or guideline from legislation or an outside agency).**

Goal #	Discipline/area goal and objectives	Relationship to Strategic Goals* in Educational Master Plan (EMP) and/or Outcomes	Action plan(s) or steps needed to achieve the goal**	Resources needed (Y/N)?
	Basic Skills Area: Addressing current college students	*4. Advance more students to college-level coursework.	• Promote basic skills programs and initiatives such as MATH 001 in both campuses. • Increase the number of In-class tutoring sections. • Hire more tutors and lab assistant, design a robust room schedule, and properly train faculty.	Yes
		*2. Increase efficient and effective use of all resources: Technology, Facilities, Human Resources, Business Services	Introduce and develop a course on using mathematical software such as MATHEMATICA or MAPLE for STEM students.	Yes
		*4. Advance more students to college-level coursework.	Develop pathways for Non-STEM students	Yes
	Basic Skills Area: Addressing prospective AVC students	*4. Advance more students to college-level coursework.	• Continue highly successful Summer Bridge Program in Palmdale. • Promote SMAP and close collaboration with local high schools in developing and/or expanding the program.	Yes

Action plan verbs: *expand, reduce, maintain, eliminate, outsource, reorganize, re-engineer, study further, etc.*

13. Identify significant resource needs that should be addressed currently or in near term. For each request type identify which **discipline/program goal(s) from #12 guide this need**.

Indicate which Goal(s) guide this need	Type of Request (Personnel[1], Technology[2], Physical[3], Professional development[4], Other[5])	New or Repeat Request?	Briefly describe your request here	Amount, $	One-time or Recurring Cost, $?	Contact's name
1	Personnel	New	Math Lab technician for ME 100/104		One-time	T. Gordi

1	Personnel	New	Math Lab technician for Palmdale Center		One-time	T. Gordi
1 & 2	Technology	New	Renew/Purchase Mathematica		One-time	R. Osawa M. Tran T. Gordi
1	Personnel	New	Expand the Mathematics Department in Palmdale.		One-time	T. Gordi

[1]List needed human resources in priority order. For faculty and staffing request attach Faculty Position Request form.

[2]List needed technology resources in priority order.

[3] In priority order, list facilities/physical resources (remodels, renovations, or new) needed for safer and appropriate student learning and/or work environment.

[4]List needed professional development resources in priority order. This request will be reviewed by the professional development committee.

[5]List any other needed resources in priority order.