Program Review Annual Update

1. Discipline/Area Name: Agriculture/Landscape/Park and Landscape Management	2. 2016
3. Neal Weisenberger	
4. Names of all participants in this review:	
5. 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.)

Data/Outcome Analysis and Use

Please review and interpret data by following the provided links:

#	Indicator	Comments and Trend Analysis
6.	Please review the FTES and enrollment (headcount) data. If applicable, please also review division or department data.	Comments on trends over the past five years and how they affect your program:
7.	Report program/area data showing the quantity of services provided over the past five years (e.g. number transactions, acreage maintained, students served, sales figures)	Comment on trends and how they affect your program:
8.a.	Student success and retention rates Equity groups within discipline	Review and interpret data by race/ethnicity and gender or both together. Identify what actions are planned to meet the Institutional Standard of **68%** for student success and to close achievement gaps:

8.b.	Number of Sections by Location and Modality .	Comment on trends:
9.	Career Technical Education (CTE) programs: Review the labor market data on the California Employment Development Department website for jobs related to your discipline.	Comment on the occupational projections for employment in your discipline for the next two years and how the projections affect your planning:

10. Cite examples of using outcome (PLO, SLO, and/or OO) action plans as the basis for resource requests and the allocation of those requests (e.g. human, facilities/physical, technology, financial, professional development) or making other changes that resulted in or correlate with improved outcome findings over the past five years.

SLO/PLO/OO	Action Plan	Current Status	Impact of Action

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/Action Plans	Current Status	Impact of Action (describe any relevant measures/data used to evaluate the impact)
Briefly discuss your progress in achieving those goals:		
Please describe how resources provided in support of previous program review contributed to program improvements:		

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 2016-2017. Discipline/area goals must be guided by **district Strategic Goals** in the Educational Master Plan (EMP). 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 other	Expected Impact of Program Outcomes/Student Learning	Action plan(s) or steps needed to achieve the goal**	Resources needed (Y/N)?

***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/area goal(s) from 12 guide this need**.

Indicate which Discipline/area Goal(s) guide this need	Type of Request (Personnel[1], Physical[2], Technology[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]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.

Program Review Annual Update

7. Discipline/Area Name: **Biology**	8. Year: **2015-2016**
9. Name of person leading this review: **Dr. Zia Nisani**	
10. Names of all participants in this review: **Dr. Anne Hemsley**, **Professor Stephen Langjahr, Dr. Matthew Rainbow, Dr. Nikki M. Riley,**	
11. 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.)

Data/Outcome Analysis and Use

Please review and interpret data by following the provided links:

#	Indicator	Comments and Trend Analysis
12.	Please review the FTES and enrollment (headcount) data. If applicable, please also review division or department data.	Comments on trends over the past five years and how they affect your program: **The FTES are still below pre-recession numbers (356.5 Fall 2010 & 323.9 Fall 2015) however, easing of budgetary constraints that were impacting course offerings have allowed more students access to courses vital to the pursuit of careers in Biological and Health Sciences. The trend suggests a strong and constant demand for biology course offerings. With projected increase of allied health degrees/certificates (Nursing, etc.), development and implementation of AVC2CSU program, development of AS-T Biology degree, increase in number of students declaring biology as major and the new Palmdale Center , the demand to offer more biology courses is projected to increase and this is a trend that we are already seeing. To meet some of the demand we have increased our summer and intersession offerings and there is room to grow but we do require more full-time faculty (2) and a full-time biology lab technician.**
7.	Report program/area data showing the quantity of services provided over the past five years (e.g. number transactions, acreage maintained, students served, sales figures)	**As mentioned in question 6, the demand for biology continues to grow and we need to be prepared to meet the demands. In fall of 2015 we served 1087 students. From 2011-2012 to 2013-2014 we almost doubled the number of students earning an Associate of Science degree in Biology. It should be noted that majority of students taking our Biology courses are doing so in preparation for the allied Health degrees (nursing etc.) and the trend is showing that these numbers are increasing.**

8.a.	Student success and retention rates Equity groups within discipline	Review and interpret data by race/ethnicity and gender or both together. Identify what actions are planned to meet the Institutional Standard of **68%** for student success and to close achievement gaps: **We consider all races and genders relevant to the Biology program. The success and retention rates are 62% and 81% respectively. There numbers are similar to 2009 numbers but lower than 2011 numbers which reflected a 70% success rate and an 84% retention rate. One explanation for this trend is that with the struggling economy more students enrolled at AVC and many did not have the proper skill levels for the rigorous biology courses.** **Looking at success and retention rates for specific race/ethnicity groups, Asian students have the highest rates (71% & 86%) followed by white/Non-Hispanics (67% & 83%) with Hispanics/Latino (61% & 81%) and Black/African Americans (54% & 77%) ranking 3rd and 4th. When data is examined across genders, the success and retention as whole are very similar (around 62% & 81% respectively) with Asian students performing the best, followed by Hispanics/Latino and and Black/African Americans.** **There is a significant difference in success rates among races/ethnicities and we will be having dialogue as a department (and division in whole) to address this gap.**
8.b.	Number of Sections by Location and Modality .	Comment on trends: **The majority of Biology courses (more than 95%) are taught on the Lancaster campus with few offerings in Palmdale. The main reason is lack of a wet lab facility; a problem that will be remedied when new Palmdale center is opened. As for Modality, the majority of our courses are traditional with a few online/hybrid classes. Biology courses do not easily convert online given their hands-on instruction mode and academic rigor.**
9.	Career Technical Education (CTE) programs: Review the labor market data on the California Employment Development Department website "N/A"for jobs related to your discipline.	Comment on the occupational projections for employment in your discipline for the next two years and how the projections affect your planning: **N/A**

10. Cite examples of using outcome (PLO, SLO, and/or OO) action plans as the basis for resource requests and the allocation of those requests (e.g. human, facilities/physical, technology, financial, professional development) or making other changes that resulted in or correlate with improved outcome findings over the past five years.

SLO/PLO/OO	Action Plan	Current Status	Impact of Action
SLO 2 (Biol 120)	**Need to buy more skeletal specimens and slides along with Dissecting Microscopes with digital photography capabilities (and appropriate laptops) to assist in implementing an Inquiry-based approach to covering Biodiversity across taxa (especially Animalia).**	**Ongoing**	**Historically, Biology 120 final lab practical scores have been low (Mean ± SD, 50.5 ± 16.3, N = 73). These low scores also affected our ability to meet the targets set for our SLO 2. In order to improve scores and enhance student learning, we set out to convert the majors' lab into an Inquiry-based lab that emphasizes hands-on experience and phylogenetic tree thinking.** **Using the grant money we purchased skeletal specimens and slides along with Dissecting and Compound Microscopes with digital photography capabilities (and appropriate laptops) and implemented an Inquiry-based approach to covering Biodiversity across taxa (especially Animalia). These streams allowed students to collect data and record their observations (along with digital images) of various specimens and structures. Student research teams recorded and organized the observations that they made and analyzed their data in a phylogenetic framework. During these streams, students were able to work through a set of exercises designed to help them learn how to read, interpret, and manipulate phylogenetic trees (which tied-in well with SLOs 1, 4, 5).** **With acquisition of new equipment that happened in Spring 2015 and implementation (Fall 2015) of new hands-on inquiry based approaches in lab and lecture, not only we were able to meet the set SLO target but mean lab final scores increased substantially (70 ± 17, N = 28) This change was shown to be statistically significant, $t(99) = 5.31$, $p < 0.0001$.** **Even though this data is preliminary, we believe that these changes do show a trend in positive direction. This is strong evidence that un-cooking our majors lab is a step in the right direction.**

SLO 1 (Biol 101)	**Creating a new graphics covering concepts that deal with defining life and cell.**	**Completed**	**In the Spring of 2015 an increase in the percentage of students who scored 70% or higher (from 16% up to 25%) on the First Midterm, which is concerned with cell structure, and SLO #1: Define Life, and describe the basic unit of Life, the Cell. This improvement was the direct result of creating five major color graphics that relate cell biochemistry to cell structure, which are collectively referred to as "The Molecules of Life", a project as a result of graphing/analyzing SLO data for Biology 101 the previous year.**
SLO1 (Biol 204)	**Addition of vortexes to each laboratory bench to assist students in obtaining good bacterial samples from provided cultures.**	**Completed**	**Success in laboratory sessions (SLO 1) has been improved by the addition of vortexes to each laboratory bench to assist students in obtaining good bacterial samples from provided cultures. Laboratory success increased from that observed in the previous cycle by approximately 5%.. Revisions to Outcomes made in WEAVE do not permit comparisons of findings from old but equivalent SLOs to findings associated with the revised SLOs, and the revision was implemented at the end of the 2013-2104 cycle. We predict a consistent improvement in laboratory performance however, and will comment upon this in the next cycle as well.**

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/Action Plans	Current Status	Impact of Action (describe any relevant measures/data used to evaluate the impact)
1) Improvement of student learning outcomes.	**Ongoing**	**Grades earned in Biology courses show consistent percentages of A, B, C, D and F grade allocations over the five year time period surveyed. The percentage student success rate in Biology courses averages around 60-64%, slightly lower than the 68% goal required by the college. Given that these courses are in the science discipline, and required by students**

		who frequently do not choose science as their study major, the success rate for these more rigorous courses should perhaps be perceived as acceptable, when compared with other college disciplines.
2) Reform instructional methodology to include Inquiry-based learning	**Ongoing**	**Biology 120 overall scores (and meeting set SLO targets) have increased ever since introducing inquiry-based hands on labs, case studies and phylogenetic thinking into curriculum. Even though these were implemented in Fall 2015, we expect the trend to continue.**
3) Develop an undergraduate research (UR) Program.	**Ongoing**	**Few faculty are conducting research with some of their students with some success.**
Briefly discuss your progress in achieving those goals: **(see comments under "impact action" above)**		
Please describe how resources provided in support of previous program review contributed to program improvements: **Goals 1 and 2- To improve Biology 120 outcomes we Used grant money to purchase skeletal specimens and slides along with Dissecting and Compound Microscopes with digital photography capabilities (and appropriate laptops) and implemented an Inquiry-based approach to covering Biodiversity across taxa (especially Animalia). These streams allowed students to collect data and record their observations (along with digital images) of various specimens and structures. Student research teams recorded and organized the observations that they made and analyzed their data in a phylogenetic framework. During these streams, students were able to work through a set of exercises designed to help them learn how to read, interpret, and manipulate phylogenetic trees (which tied-in well with SLOs 1, 4, 5).** **Furthermore, we are continuing to monitor our SLOs (and student progress in general) in order to give them the best possible education.** **Goal 3- The development of undergraduate research program is still in its infancy but had students present some of their research at the annual meeting of Southern California Academy of Sciences. This program continues to flourish as we expect to get a dedicated space to conduct research and with addition of some research grade equipment. Furthermore, the new STEM grant that the school is applying for has undergraduate research identified as one of its objectives. This additional money will be of great benefit to this program.**		

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 2016-2017. Discipline/area goals must be guided by **district Strategic Goals** in the Educational Master Plan (EMP). 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 other	Expected Impact of Program Outcomes/Student Learning	Action plan(s) or steps needed to achieve the goal**	Resources needed (Y/N)?
1	**Improvement of student learning outcomes**	***1. Support learning and facilitate student success** **2. Increase the transfer rate** **5. Utilize campus resources efficiently and effectively** **7. Enhance technology's support of the college Mission**	**(1) Increase student success & (2) Increasing the number of transfer students.**	**As mentioned in question 6, the demand for biology coursing is trending upward. To meet this demand we have to expand (along with regular semester) our summer and intersession course offerings. To meet this course expansion we need to purchase more charts, models, slides and additional articulate animal skeletons for Biology majors & non-majors, Anatomy and Physiology courses, and hire more full-time faculty members, and biology techs. To meet these needs we need to allocate more financial resources for purchasing. Furthermore, we need to develop certificates in Biotechnology and Forensic Sciences (both are in discussion/planning phase).**	**Yes**
2	**Reform instructional methodology to include Inquiry-based learning**	***1. Support learning and facilitate student success** **2. Increase the transfer rate**	**(1) Increase student success rate.** **(2) Increasing the number of transfer students.**	**(1) Purchasing of equipment that will facilitate hands-on and inquiry-based, (2) Creation and support of workshops and**	**Yes**

				other professional development opportunities and finally (3) Streamlining the purchasing process.	
3	Develop an undergraduate research (UR) Program.	*1. Support learning and facilitate student success 2. Increase the transfer rate 7. Enhance technology's support of the college Mission	"The positive effects of an undergraduate research experience on student learning, attitude, and career choice have passed from anecdote to systematic data. Many educators, particularly in the sciences, have come to see the potential for authentic undergraduate research to be a high-impact educational practice for achieving excellence in liberal education" (Lopatto, 2010). Undergraduate research not only enhances learning and allows students to apply what they know, but increases the number of students that pursue advanced degrees and careers in science, technology, engineering,	(1) Purchasing of equipment that will facilitate hands-on and inquiry-based, (2) Creation and support of workshops and other professional development opportunities and finally (3) Streamlining the purchasing process.	Yes

			and mathematics fields (Russell et al., 2007). Currently, 4 faculties are actively involved in research that includes students with some of this collaborations resulting in publication and/or presentation in scientific venues. There is a nationwide trend for undergraduate research at community colleges (See "The Community College Undergraduate Research Initiative" http://www.ccuri.org) and it is time for AVC to start its own initiative, which could lead in Southern California and serve as a model. The proposed Biotechnology certificate and Forensic Science certificate have the potential to support to the undergraduate research program at Antelope Valley College.		

			These actions will increase our student success and will serve as a magnet in attracting students to our program. **Lopatto, D. (2010) Undergraduate Research as a High-Impact Student Experience. Peer Review. SPRING, 27-30** **Russell, S.H., Hancock, M.P., & McCullough, J. (2007). Benefits of Undergraduate Research Experiences. Science. 316, 548-549.**		

***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/area goal(s) from 12 guide this need**.

Indicate which Discipline/area Goal(s) guide this need	Type of Request (Personnel[1], Physical[2], Technology[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 - 3	**Personnel**	**Repeat**	**(1) Fulltime General Biology instructor (with preference to experience in areas cell biology/ Biotechnology). (2) Fulltime**	**The current rate as negotiated in contract.**	**Recurring**	**Dr. Zia Nisani Dr. Leslie Uhazy**

			Anatomy/Physiology instructor. (3) Fulltime Biology technician. • **The Biology program is the 3rd largest in terms of total FTES, the # of courses offered at AVC, and top 10 in awarded degrees.** • **General Biology is not only a prerequisite for most nursing and allied health classes, but also a major GE course for many students. To meet the increasing demands for nursing and other allied health degrees and certificates (Radiological Tech, etc.), BIOL requires expanding, too.** • **Currently, only 31% of the classes are taught by full-timers and many of our courses are over enrolled (72 students). Furthermore, increased demand for majors, Biotechnology (elective for AS-T Biology and part of AS-T Biotechnology), Anatomy and Physiology courses will**			

			further put pressure on us to add more sections. The creation of AVC2CSU has also placed an additional demand on our program. Without adequate staffing and the consistency allowed by full-time faculty members, we won't be able to sustain and increase FTES/FTEF productivity, which is among the highest at 15.37. • **Many BIOL 101 classes are taught by adjuncts (69%). Even though the Fall 2014 PT/FT ratio was 0.56, the reality is that an equivalent of 3 FTEFs were taught by full-time faculty as an overload, which is among the highest on campus. To overcome faculty shortage, we have been increasing the load of at least two adjuncts over the 67% ceiling to meet the current demand.** • **With the projected national increase in demand in the field we serve, we will not be able to offer new courses**			

			(and programs) with the current staffing. We were not able increase the adjuncts pool with qualified candidates during recent advertising attempts in Spring & Summer of 2015. • Two recently vacated full-time positions (one due to retirement, one due to quitting) have not been replaced. Since many full time faculty teach courses other than BIOL 101, more instructors are needed to teach the labs. • The need for these positions has been documented in Program Reviews.			
1 & 2	Technology	Repeat	• New microscopes for General Biology (Biol 101) lab. • The Biology 100 and 102 courses need additional laboratory equipment and supplies. These courses are offered during all four semesters at the College and a significant number of students often take either	400,000$	One-time	Dr. Zia Nisani Dr. Leslie Uhazy Dr. Nikki Riley Professor Stephen Langjahr

			one of these course or both in preparation for the Biology 201 and Biology 202 (Anatomy and Physiology classes). Typically these courses share or borrow supplies with the Biology 201 course. However, because of the year round enrollment and the relevance of these courses as they feed into the second year curriculum of the introductory human anatomy course---these classes deserve their own budget with a monetary amount within the appropriate range and close to that of the Biology 201 course. • **Duplication of anatomical models (and slides) to permit use of HS-133 for additional sections of Biology 201 which supports the increased demand for both nursing and the kinesiology (AVC2CSU, etc.).**			

1& 2	Technology	Repeat	• New Projectors for some of HS building lecture rooms. • Some issues with inferior projection equipment persist with mediocre projector resolution and brightness forcing many instructors to lecture with the lights off. • Biology 201, General Human Anatomy, is a visual and tactile science, heavily dependent on anatomical specimens, models and images. For practical reasons, digital images comprise the bulk of anatomical instruction in lectures. Fortunately, high definition projection equipment can make this instruction compelling and student learning outcomes successful. But existing LCD projectors in many of the H&S lecture rooms are sub-par in brightness, color saturation and overall resolution, especially with high levels of ambient light. SLO's in Biology 201 include	10000$	One-time	Dr. Zia Nisani Professor Stephen Langjahr

			being able to see an appreciate cell and histological detail. Accordingly, fulfillment of Biology 201 SLO's has not been achieved in lecture. • **Due to subpar quality of projector in HS 105 (and other rooms as 105 was eventually replaced) Biol 120 lecture dealing with embryology and development was not adequate enough for students to see high enough resolution images. Thus the corresponding SLO was not assessed this semester.**			

[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.

Program Review Annual Update

1. Discipline/Area Name: Mathematics	2. Year: 2015-16
3. Name of person leading this review: Tooraj Gordi	
4. Names of all participants in this review: Tooraj Gordi	
5. Status Quo option: Year 1: Comprehensive review Year 2: 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.

Year 3: Annual update Year 4: Annual update or status quo option	☐ 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.)

Data/Outcome Analysis and Use

Please review and interpret data by following the provided links:

#	Indicator	Comments and Trend Analysis
6.	Please review the FTES and enrollment (headcount) data. If applicable, please also review division or department data.	No significant changes have occurred since 2014-15 comprehensive review.
7.	Report program/area data showing the quantity of services provided over the past five years (e.g. number transactions, acreage maintained, students served, sales figures)	No significant changes have occurred since 2014-15 comprehensive review.
8.a.	Student success and retention rates Equity groups within discipline	No significant changes have occurred since 2014-15 comprehensive review in most areas. However, the new Redesigned Modular Approach that was implemented in fall of 2014 to enhance the instruction and delivery of the individualized courses (MATH 099) has shown incredible results in student success and retention rates.
8.b.	Number of Sections by Location and Modality .	No significant changes have occurred since 2014-15 comprehensive review.
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 outcome (PLO, SLO, and/or OO) action plans as the basis for resource requests and the allocation of those requests (e.g. human, facilities/physical, technology, financial, professional development) or making other changes that resulted in or correlate with improved outcome findings over the past five years.

SLO/PLO/OO	Action Plan	Current Status	Impact of Action
	Created STEM pathway		As indicated in the Comprehensive Program Review, the new STEM pathway was implemented in the fall 2015 semester. Though it is too early to analyze its impact, 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, we expect an increase in the number of Pre-Calculus sections in the fall 2016 semester.
	Increased the number of MATH 099 sections		Student enrollment in MATH 099 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 099		Action has not been taking place yet. A tentative classroom remodeling plan is set for June 2016. We were able to secure fund through the existing STEM grant. However, as the number of sections and rooms are expected to increase, we will be in an immediate need of computers, furniture, and white boards. More importantly, the new room design requires more man power. There is a urgent need for in-class tutors and a full time lab assistant.

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/Action Plans	Current Status	Impact of Action (describe any relevant measures/data used to evaluate the impact)
Expansion of MATH 099	Ongoing	See section 10.
Briefly discuss your progress in achieving those goals:		

1-We were able to reduce the class size of all math classes (fall 2015) to 35 per room. (Goal 1) 2-Course Outlines of Record (COR) of several courses were updated and proposals were submitted to AP&P to obsolete MATH 080, MATH 130, and MATH 125. (Goal 3) 3-A new math course, MATH 116 Statistics Using R, was created and approved. This course will be offered, for the first time, in fall 2016. (Goal 3) 4-The math Transfer Model Curriculum (TMC) was updated to include MATH 116 as an elective course. (Goal 5) 5-Department has taken steps to join the Multiple Measure Assessment Project, a subproject of the Common Assessment Initiative, in hope of improving student course placement. (Goal 4)
Please describe how resources provided in support of previous program review contributed to program improvements: Efforts from both faculty and administration made these goals attainable.

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 2016-2017. Discipline/area goals must be guided by **district Strategic Goals** in the Educational Master Plan (EMP). 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 other	Expected Impact of Program Outcomes/Student Learning	Action plan(s) or steps needed to achieve the goal**	Resources needed (Y/N)?
	Near Term Goals (as indicated in the math PR)	*4. Increase student success in Basic Skills and ESL courses *1. Support learning and facilitate student success	Faster completion rate in the Basic Skills area	Hire more tutors and lab assistant, design a robust room schedule, and properly train faculty.	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/area goal(s) from 12 guide this need**.

Indicate which Discipline/area Goal(s) guide this need	Type of Request (Personnel[1], Physical[2], Technology[3], Professional development[4], Other[5])	New or Repeat Request?	Briefly describe your request here	Amount, $	One-time or Recurring Cost, $?	Contact's name
Basic skills	Personnel	New	A full time Lab assistant. In-class tutors, equipment such as printer, papers, and usual office supplies.		One-time	

[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.

Program Review Annual Update

7. Discipline/Area Name: Physical Sciences	8. Year: 2015-16
9. Name of person leading this review: Christos Valiotis	
10. Names of all participants in this review Joe Towe, Mark McGovern, Alexandra Schroer, Mike Pesses, Aurora Burd, Jason Bowen, Jeffrey Cooper, Carlos Hernandez, David Newman, Jessica Harper	
11. 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.)

Data/Outcome Analysis and Use

Please review and interpret data by following the provided links:

#	Indicator	Comments and Trend Analysis
12.	Please review the FTES and enrollment (headcount) data. If applicable, please also review division or department data.	Comments on trends over the past five years and how they affect your program:

7.	Report program/area data showing the quantity of services provided over the past five years (e.g. number transactions, acreage maintained, students served, sales figures)	Comment on trends and how they affect your program:
8.a.	Student success and retention rates Equity groups within discipline	Review and interpret data by race/ethnicity and gender or both together. Identify what actions are planned to meet the Institutional Standard of **68%** for student success and to close achievement gaps:
8.b.	Number of Sections by Location and Modality .	Comment on trends:
9.	Career Technical Education (CTE) programs: Review the labor market data on the California Employment Development Department website for jobs related to your discipline.	Comment on the occupational projections for employment in your discipline for the next two years and how the projections affect your planning:

10. Cite examples of using outcome (PLO, SLO, and/or OO) action plans as the basis for resource requests and the allocation of those requests (e.g. human, facilities/physical, technology, financial, professional development) or making other changes that resulted in or correlate with improved outcome findings over the past five years.

SLO/PLO/OO	Action Plan	Current Status	Impact of Action

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/Action Plans	Current Status	Impact of Action (describe any relevant measures/data used to evaluate the impact)

Briefly discuss your progress in achieving those goals:		
Please describe how resources provided in support of previous program review contributed to program improvements:		

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 2016-2017. Discipline/area goals must be guided by **district Strategic Goals** in the Educational Master Plan (EMP). 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 other	Expected Impact of Program Outcomes/Student Learning	Action plan(s) or steps needed to achieve the goal**	Resources needed (Y/N)?

***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/area goal(s) from 12 guide this need**.

Indicate which Discipline/area Goal(s) guide this need	Type of Request (Personnel[1], Physical[2], Technology[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]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.