



2016-2017 Instructional Program Review Annual Update

PHYSICS

1. Discipline/Area Name: PHYSICS:MSE	For: 2016-2017
2. Name of person leading this review: Joe Towe, Mark McGovern, Jason Bowen, Christos Valiotis	
3. Names of all participants in this review: Joe Towe, Mark McGovern, Jason Bowen, Christos Valiotis	
4. Status Quo option: Year 1: Comprehensive review <input type="checkbox"/> Year 2: Annual update or status quo option <input type="checkbox"/> Year 3: Annual update <input checked="" type="checkbox"/> Year 4: Annual update or status quo option <input type="checkbox"/>	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. <input type="checkbox"/> 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

4

Number of Part-time Faculty

1

Data/Outcome Analysis and Use

5. Please review the [subject level data](#) and comment on trends (more data will be available the Program Review [web page](#)):

Indicator	2012-2013	2013-2014	2014-2015	2015-2016	Recent trends?	Comment
Enrollment #	331	471	403	487	Increase	
# of Sections offered	15	21	18	19	Increase	
# of Online Sections offered	0	0	0	0	No Change	
# of Face-to-Face Sections offered	15	21	18	19	Increase	
# of Sections offered in Lancaster	15	21	18	19	Increase	
# of Sections in other locations	0	0	0	0	No Change	

<u># of Certificates awarded</u>	N/A	N/A	N/A	N/A	No Change	
<u># of Degrees awarded</u>	N/A	N/A	3	17	Increase	The Physics As-T was first offered in the 2014-15 academic year and we are very pleased to observe that it is beginning to attract a significant number of students.
Subject Success Rates	87.6	83.7	84.1	83.4	No Change	There was a slight decrease from 2012 to 2016 but in general the success rate has remained fairly constant at 84.5% on average, much higher than the college wide goal of 69.1%.
Subject Retention Rates	94	92.1	90.6	91.2	No Change	The retention rate has largely remained constant at 92%.
Full-time Load (Full-Time FTEF)	4.63	3.77	3.67	3.46	Decrease	The full-time load has decreased slightly while serving more students and sections, because of the decision to increase the number of students enrolled in a few sections from 24 to 48. As a result, the department has increased its efficiency.
Part-time Load (Part-time FTEF)	0	.2	0	.2	No Change	
PT/FT FTEF Ratio	0	.05	0	.06		

#	Indicator	Comments and Trend Analysis
7.	If applicable, report program/area data showing the quantity of services provided over	N/A

	<p>the past four years (e.g. # of workshops or events offered, ed.plans developed, students served)</p>																																																																																																														
<p>8. Student success and retention rates by equity groups within discipline</p>	<p>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:</p> <table border="1" data-bbox="485 592 2026 836"> <thead> <tr> <th></th> <th>2012-13</th> <th>Achvmnt Gap</th> <th>2013-14</th> <th>Achvmnt Gap</th> <th>2014-15</th> <th>Achvmnt Gap</th> <th>2015-16</th> <th>Achvmnt Gap</th> <th>All Years</th> <th>Achvmnt Gap</th> </tr> </thead> <tbody> <tr> <td>Race/Ethni</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Afr-Am</td> <td>95.00%</td> <td>-3.00%</td> <td>55.00%</td> <td>34%</td> <td>47.00%</td> <td>35.00%</td> <td>80.00%</td> <td>2.00%</td> <td>69.00%</td> <td>17%</td> </tr> <tr> <td>Hispanic</td> <td>84.00%</td> <td>8.00%</td> <td>82.00%</td> <td>7.00%</td> <td>88.00%</td> <td>-6.00%</td> <td>83.00%</td> <td>-1.00%</td> <td>84.00%</td> <td>-2.00%</td> </tr> <tr> <td>Other</td> <td>83.00%</td> <td></td> <td>86.00%</td> <td></td> <td>86.00%</td> <td></td> <td>89.00%</td> <td></td> <td>86.00%</td> <td></td> </tr> <tr> <td>White</td> <td>92.00%</td> <td></td> <td>89.00%</td> <td></td> <td>82.00%</td> <td></td> <td>82.00%</td> <td></td> <td>86.00%</td> <td></td> </tr> </tbody> </table> <p>(Success by race or ethnicity.)</p> <table border="1" data-bbox="485 933 2026 1096"> <thead> <tr> <th></th> <th>2012-13</th> <th>Achvmnt Gap</th> <th>2013-14</th> <th>Achvmnt Gap</th> <th>2014-15</th> <th>Achvmnt Gap</th> <th>2015-16</th> <th>Achvmnt Gap</th> <th>All Years</th> <th>Achvmnt Gap</th> </tr> </thead> <tbody> <tr> <td>Gender</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Female</td> <td>94.00%</td> <td>-9.00%</td> <td>85.00%</td> <td>-1.0%</td> <td>87.00%</td> <td>-4.00%</td> <td>85.00%</td> <td>-3.00%</td> <td>87.00%</td> <td>-4.00%</td> </tr> <tr> <td>Male</td> <td>85.00%</td> <td></td> <td>84%</td> <td></td> <td>83.00%</td> <td></td> <td>82.00%</td> <td></td> <td>83.00%</td> <td></td> </tr> </tbody> </table> <p>(Success by gender)</p> <p>The success rate gap between Hispanics and whites has essentially been eliminated from 2012 to 2016. The achievement gap between African American and white students shows large fluctuations but this can be easily attributed to the small number of A-A students. Statistically, there is no valid trend that could be reliably reported. Nevertheless, more effort needs to be expended to increase the overall number of A-A students enrolled in the program. Overall, all groups have met or significantly surpassed the institutional goal of 69.1% success rate.</p>		2012-13	Achvmnt Gap	2013-14	Achvmnt Gap	2014-15	Achvmnt Gap	2015-16	Achvmnt Gap	All Years	Achvmnt Gap	Race/Ethni											Afr-Am	95.00%	-3.00%	55.00%	34%	47.00%	35.00%	80.00%	2.00%	69.00%	17%	Hispanic	84.00%	8.00%	82.00%	7.00%	88.00%	-6.00%	83.00%	-1.00%	84.00%	-2.00%	Other	83.00%		86.00%		86.00%		89.00%		86.00%		White	92.00%		89.00%		82.00%		82.00%		86.00%			2012-13	Achvmnt Gap	2013-14	Achvmnt Gap	2014-15	Achvmnt Gap	2015-16	Achvmnt Gap	All Years	Achvmnt Gap	Gender											Female	94.00%	-9.00%	85.00%	-1.0%	87.00%	-4.00%	85.00%	-3.00%	87.00%	-4.00%	Male	85.00%		84%		83.00%		82.00%		83.00%	
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<p>9. Career</p>	<p>Comment on the <u>occupational projections</u> for employment in your <u>discipline</u> for the next two years and how the</p>																																																																																																														

<p>Technical Education (CTE) programs: Review the labor market data on the California Employment Development Department website for jobs related to your discipline.</p>	<p>projections affect your planning: N/A</p>
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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
<p>PHYS 110 – SLO 1,2,6</p>	<p>2014-2015</p>	<p>Ongoing</p>	<p>The last few years of administering pre- and post-standardized testing have come short of achievement targets. As a result there has been a greater focus on communicating the underlying conceptual understanding students must develop to succeed. A greater emphasis has been placed in classroom discussion of conceptual ideas using Active Learning methods in areas that have shown deficiencies as opposed to a traditional lecture style. Additionally, more homework activities of a conceptual nature have been administered. SLO data helps to identify the areas that need more attention.</p>
<p>PHYS 120 – SLO 4</p>	<p>2014-2015</p>	<p>Ongoing</p>	<p>Focus on laboratory activities were adjusted in the last couple of years in response to SLO data showing that students were not comprehending the principles and processes involved in collecting data and analyzing it. We acquired some new equipment in the last couple of years to create a more hands-on approach to understanding Coulomb’s law and electric fields. This is an ongoing process as we</p>

			make adjustments to lab activities to help students with the process of collecting data, understanding error analysis, and how to visually represent the data when it is deemed important.

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)
Goal 1	Ongoing	Continued use of Active Learning methods in response to SLO assessments.
Goal 2	Ongoing	Student success and retention rates have remained steady even after the implementation of lowering the units of PHYS 110 and 120 from 5 to 4 units.
Goal 3	Completed	Last academic year saw the increase of physics degrees awarded from 3 the previous year to 17.

Briefly discuss your progress in achieving those goals: **The goal to increase the number of degrees awarded has been completed, but a new goal has been set to establish a trend of an annual increase of 10%.**

Please describe how resources provided in support of previous program review contributed to program improvements:
The physics laboratories are fully equipped with state of the art equipment and there are adequate supplies for students. Funding has been provided both by the district and through federal grants. Faculty have the choice to choose the most appropriate tools to engage students in the learning process.

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)?
1	Revision of SLO methods and	*3. Focus on utilizing proven	Faculty have met this semester and will continue to	No

