



## Physics Program Review

2013-2014

Department Chairs,

It is program review time again! Enclosed you will find your program review document that needs to be completed and turned in to your Dean by October 7, 2013. The purpose of program review is for faculty and staff members to evaluate their program's performance based on an analysis of data and to develop initiatives for improvement. Through the creation of initiatives, some requiring resources and some not, programs will establish goals and long-term program plans.

You will see that the document has been simplified in order to provide a more cohesive but functional document that we hope will be easier for your department to complete. You will also find included appendices with helpful information such as the Process Map, What to Leave In and What to Leave Out Guidelines, and the Academic Senate Rubric for Instructional Program Vitality.

Please note that instruction prompts have been provided in italics throughout sections of the document to provide guidance for interpreting data and providing analysis statements. You may remove these instructions as you complete each section. Please use 11 point, Calibri font for consistency.

Areas such as your program/department description and the staffing chart have been pre-populated using information from your last program review document. Please revise as necessary. Please note that you are not required to create initiatives for each area of data. However, programs are required, at a minimum, to create initiatives that do not require resources as every program should have some area (i.e. student success, retention) in which it is trying to improve. And programs, which offer degrees and/or certificates, need to set goals for increasing program completion rates (per direction from the Accrediting Commission).

The last page of the document includes a process verification section where you will note the participants and document the meeting dates. Your Division Dean will also need to electronically verify review prior to submitting the document, so be sure to plan accordingly.

### **Appendices:**

- A-Program Review Process Map-Instructional Programs
- B-What to Leave In and What to Leave Out
- C-Academic Senate Rubric for Instructional Program Vitality-Instructional Academic Programs
- D-Academic Senate Rubric for Instructional Program Vitality-Instructional CTE Programs
- E-Appeal Form

### **Attachments:**

- Data packets for your program/department

### **WHO TO CALL FOR ASSISTANCE**

#### **Budget and Inventory Data:**

David Keebler, VP-Administrative Services, ext. 6354

#### **Data Analysis and Interpretation:**

Michael Callahan, Institutional Researcher, ext. 6344

#### **Instructional Programs:**

Kathy Scott, Dean-Institutional Effectiveness, ext. 6468

Debbie Newcomb, Faculty Facilitator, ext. 6368

Sandy Hajas, LRC Supervisor, ext. 6179

#### **Services:**

Susan Bricker, Registrar, ext. 6044



**Due October 7, 2013**



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Sandy Hajas, LRC Supervisor, ext. 6179

Kathy Scott, Dean-Institutional Effectiveness, ext. 6468



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### Section I – Accomplishments and Status of 2012 Program Review Report

#### A. Last Year's Initiatives

*Instructions:*

- Provide a brief status of initiatives created last year that did not require funding. Include an explanation of what changes occurred (i.e. in student learning) as a result of those initiatives.

*The non-funded initiative 2012-2013 was to improve productivity scores of online Phys V02B/V03B students by online tracking weaker students, offering optional Instructor tutoring, and emphasizing cohort study groups.*

*These initiatives are now being implemented in Phys V02A/V03A (Fall 2013) and will be implemented in Phys V02B/V03B (Spring 2014).*

- Provide a brief status of initiatives created last year that required funding. For those that were funded, what changes occurred (i.e. in student learning) as a result of the initiatives/funding.

*The funded initiative 2012-2013 was to hire 1 FTF in physics. This was accomplished during Spring 2013, and Dr. Jeff Wood was brought into the Physics Department where he is now undergoing the faculty tenure process.*

#### B. Updates/accomplishments pertaining to any of the Student Success or Operating Goals from last year's report.

*Instructions: Provide any updates/accomplishments pertaining to Student Success or Operating Goals you created last year (see your last year's program review). The goals will not be continued in this same manner, but we want to provide faculty and staff the opportunity to provide any updates/accomplishments that may have taken place since last year.*

*The student success for 2012-2013 was 3/3 and the student success for 2013-2014 was also 3/3. The Physics Program continues to operate in a vibrant range.*

### Section II - Description

#### A. Description of Program/Department

The strong emphasis in physics on fundamental concepts and problem solving makes it one of the most versatile majors available. The Physics major provides the basis for careers in applied physics and in interdisciplinary areas such as astronomy, biophysics, environmental science, oceanography, and scientific instrumentation.

##### Degrees/Certificates

Program's courses are designed to articulate to UC and CSU for transfer students. No degrees or certificates are awarded.

#### B. Program/Department Significant Events (Strengths and Successes), and Accomplishments

*Instructions:*

- What has changed over the past year (i.e. faculty, degrees/certificates, curriculum, etc.)?
- What is impacting the program now?



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*In the past year Physics added a FTF position for the first time in 22 years. This hiring was to backfill a FTF retirement in 2011. The current FTF Department Head, Dr. Steve Quon, plans to take retirement in May 2014, so a second FTF position will be sought.*

**C. 2013-2014 Estimated Costs/Gainful Employment – for Certificates of Achievement ONLY**

	Cost		Cost		Cost		Cost
Enrollment Fees		Enrollment Fees					
Books/ Supplies		Books/ Supplies					
Total		Total		Total		Total	

**D. Criteria Used for Admission**

Open admission with no pre-requisites.

**E. College Vision**

Ventura College will be a model community college known for enhancing the lives and economic futures of its students and the community.

**F. College Mission**

At Ventura College, we transform students’ lives, develop human potential, create an informed citizenry, and serve as the educational and cultural heart of our community. Placing students at the center of the educational experience, we serve a highly diverse student body by providing quality instruction and student support, focusing on associate degree and certificate completion, transfer, workforce preparation, and basic skills. We are committed to the sustainable continuous improvement of our college and its services.

**G. College Core Commitments**

Ventura College is dedicated to following a set of enduring Core Commitments that shall guide it through changing times and give rise to its Vision, Mission and Goals.

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Student Success</li> <li>• Respect</li> <li>• Integrity</li> <li>• Quality</li> <li>• Collegiality</li> <li>• Access</li> </ul> | <ul style="list-style-type: none"> <li>• Innovation</li> <li>• Diversity</li> <li>• Service</li> <li>• Collaboration</li> <li>• Sustainability</li> <li>• Continuous Improvement</li> </ul> |
|--|---|

**H. Organizational Structure**



## Physics Program Review

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**President:** Greg Gillespie

**Executive Vice President:**

**Dean:** Dan Kumpf

**Department Chair:** Steve Quon (fall semester)

Steve Palladino (spring semester)

### Faculty/Staff:

<b>Name</b>	<b>W. Steve Quon</b>
Classification	Professor
Year Hired	1991
Years of Work-Related Experience	22
Degrees/Credentials	B.S., M.A., Ph.D.

<b>Name</b>	<b>Wood, Jeffrey</b>
Classification	Professor
Year Hired	2013
Years of Work-Related Experience	5
Degrees/Credentials	B.S., Ph.D.

<b>Name</b>	<b>Colin Terry</b>
Classification	Professor (Part-Time)
Year Hired	1987
Years of Work-Related Experience	26
Degrees/Credentials	M.S., PhD (Physics)

<b>Name</b>	<b>William Barber</b>
Classification	Instructor (Part-Time)
Year Hired	2008
Years of Work-Related Experience	6
Degrees/Credentials	B.S., M.S., PhD (Physics)

<b>Name</b>	<b>Dale Synnes</b>
Classification	Instructor (Part-Time)
Year Hired	2009
Years of Work-Related Experience	20
Degrees/Credentials	B.S., M.S. (Physics)



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Name	Orlando Warren
Classification	Instructor (Part-Time)
Year Hired	2011
Years of Work-Related Experience	2
Degrees/Credentials	B.S., M.S. (Physics)

### Section IIIa – Data and Analysis

#### A. SLO Data

Instructions:

- Provide highlights of what you learned last year in your assessments and discussions.
- Provide highlights of some of the changes made as a result of the assessments and discussions.
- How did the changes affect student learning – or how do you anticipate that they will?
- Based on what you learned, what initiatives requiring resources could you develop (or have you developed) to improve student learning? Explain briefly. Initiatives need to be entered in more detail in Section V.
- What are the most significant initiatives not requiring resources you could (or have developed) to improve student learning? Explain briefly. Initiative(s) need to be entered in more detail in Section V.
- Comment on the status of your SLO rotational plan, mapping, and other TracDat work.

#### SLO Data

Instructions:

- Provide highlights of what you learned last year in your assessments and discussions.  
Physics courses are taught live with the exception of the 1-year non-engineering physics, Phys V02/3, which is taught as a co-listed algebra-based (V02) and calculus-based (V03) online course. All calculus-based engineering physics courses met performance target, however elementary physics, Phys V01, which is a GE science course for all majors and non-declared students, and online Phys V02/V03 did not.

In Phys V01 students completed the homework assignments successfully but failed to meet target on exams. The challenge of teaching an introductory course for any subject is commonly engagement of a broad student spectrum.

In online Phys V02/V03, targets were met in the Fall, but missed targets by about 10% in the Spring. The facts that this course is co-listed and taught online provide unique challenges. The Department does not have sufficient faculty to run these courses separately, and the enrollment numbers do not divide evenly so that minimum enrollment may not be reached for one or the other group. The online format is very popular with these students, however, most of them regard physics as simply a “required” course in their curriculum which leads to less than optimum attention.

- Provide highlights of some of the changes made as a result of the assessments and discussions.  
Two changes have been implemented in Phys V01 and Phys V02/V03. First, greater use was made of library study sessions with cohorts. Second, more careful attention to early alert grades to keep students apprised of their performance.
- How did the changes affect student learning – or how do you anticipate that they will?  
We anticipate that implementing these two changes will be reflected in improved performance to target goals.



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- Based on what you learned, what initiatives requiring resources could you develop (or have you developed) to improve student learning? Explain briefly. Initiatives need to be entered in more detail in Section V.

The Department will request:

- one FTF position in physics/astronomy
- a high intensity projector lamp for classroom use
- new PCs for physics labs
- new student swivel chairs

- What are the most significant initiatives not requiring resources you could (or have developed) to improve student learning? Explain briefly. Initiative(s) need to be entered in more detail in Section V.

- Increase of Testing Center hours
- Reinforcement of physics prerequisites by counselors
- Improve student online preparedness through the distance educational program
- Continued use of student cohort study groups

- Comment on the status of your SLO rotational plan, mapping, and other TracDat work.

The 5-year rotation plan has started in Fall 2013. Fall semesters are scheduled for heaviest evaluation with the Spring semesters lighter to allow for catch up and follow through of initiatives. The 5-year plan is shown in the following screen shot:

	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
<b>ISLO</b>	None	None	<b>ISLO # 2 REASONING</b>	None	<b>ISLO #3 Critical Thinking and Problem Solving</b>	None	None	None	None	None
<b>Program (PSLO)</b>	None	None	None	None	None	None	None	None	None	None
<b>Course (CSLO)</b>	<b>CSLO #1</b>	<b>CSLO #1</b>	<b>CSLO #2</b>	<b>CSLO #2</b>	<b>CSLO #3</b>	<b>CSLO #3</b>	<b>CSLO #4</b>	<b>CSLO #4</b>	<b>Catch-up</b>	<b>Catch-up</b>
Phys V01 - CSLO #1	Phys V01 - CSLO #1	Phys V01 - CSLO #2 & ISLO #2	Phys V01 - CSLO #2 & ISLO #2	Phys V01 - CSLO #3 & ISLO #3	Phys V01 - CSLO #3 & ISLO #3	Phys V01 - CSLO #4	Phys V01 - CSLO #4			
Phys V02A/2AL - CSLO #1	Phys V02B/2BL - CSLO #1	Phys V02A/2AL - CSLO #2 & ISLO #2	Phys V02B/2BL - CSLO #2 & ISLO #2	Phys V02A/2AL - CSLO #3 & ISLO #3	Phys V02B/2BL - CSLO #3 & ISLO #3	Phys V02A/2AL - CSLO #4	Phys V02B/2BL - CSLO #4			
Phys V03A/3AL - CSLO #1	Phys V03B/3BL - CSLO #1	Phys V03A/3AL - CSLO #2 & ISLO #2	Phys V03B/3BL - CSLO #2 & ISLO #2	Phys V03A/3AL - CSLO #3 & ISLO #3	Phys V03B/3BL - CSLO #3 & ISLO #3	Phys V03A/3AL - CSLO #4	Phys V03B/3BL - CSLO #4			
Phys V04/4L - CSLO #1		Phys V04/4L - CSLO #2 & ISLO #2		Phys V04/4L - CSLO #3 & ISLO #3		Phys V04/4L - CSLO #4				
Phys V05/5L - CSLO #1		Phys V05/5L - CSLO #2 & ISLO #2		Phys V05/5L - CSLO #3 & ISLO #3		Phys V05/5L - CSLO #4				
	Phys V06/6L - CSLO #1 & ISLO #1		Phys V06/6L - CSLO #2 & ISLO #2		Phys V06/6L - CSLO #3 & ISLO #3		Phys V06/6L - CSLO #4			



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## B. Performance Data

### 1. Retention – Program and Course

Instructions:

Retention refers to the number/percentage of students completing the class.

- How does your program's retention rate compare to the college overall? Is comparing it to the college average appropriate or not? Please explain.

Retention and Success by Subject														Ventura College	
PHYS Comparative Summary															
Fiscal Year	A	B	C	P	CR	D	F	NP	NC	W	Graded	I	Retention	Success	
FY10	248	122	97	2	19	33	0	102	623	0	521	84%	469	75%	
Distribution %	40%	20%	16%	0%	3%	5%	0%	16%							
FY11	258	132	102	0	15	24	0	78	609	0	531	87%	492	81%	
Distribution %	42%	22%	17%	0%	2%	4%	0%	13%							
FY12	260	156	104	0	17	25	0	67	629	2	562	89%	520	83%	
Distribution %	41%	25%	17%	0%	3%	4%	0%	11%							
PHYS Prior Three Year Average	255	137	101	1	17	27	0	82	620	1	538	87%	494	80%	
	41%	22%	16%	0%	3%	4%	0%	13%							
FY13	298	117	83	1	8	26	0	89	624	2	535	86%	499	80%	
Distribution %	48%	19%	13%	0%	1%	4%	0%	14%							
College Prior Three Year Average	33%	20%	14%	3%	5%	10%	1%	14%				86%		70%	
College FY13	32%	22%	15%	3%	5%	9%	1%	14%				86%		71%	

The overall retention score for physics in FY13 was 86% which is right in line with the 2013 College retention of 86%. We believe that it is appropriate to compare physics to the College at this time.

- In looking at your program's retention rate over the past three years, is there a trend? If so, explain. The retention scores appear to be rising starting from a score of 84% in FY 2010 peaking at 89% in FY2012 and with a current value of 86% in FY2013
- In looking at the disaggregated data by gender, ethnicity, and age are there gaps in retention for certain groups of students? Also, is the retention going down for certain groups? If there are gaps, what might be done to address them?

The two majority ethnic groups are Hispanics and Whites. Comparing the overall Physics Hispanic/White retention scores with College Hispanic/White retention:

	Hispanic	White
Physics	81%	90%
College	86%	87%





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We see that physics retention for Hispanics is 5% lower than Hispanic College retention and lag White scores by 9%, while physics retention for Whites is 3% higher than White College retention. We believe that part of this is due to lower preparedness of Hispanics, math in part, but also encountering a difficult science course that depends a lot on physical intuition, and logical common sense.

Looking at retention scores by disaggregate courses:

Course	Hispanics	Whites
P1	88%	85%
P2A	43%	43%
P3A	64%	100%
P2B	100%	100%
P3B	100%	100%
P4	84%	96%
P5	79%	94%
P6	83%	100%

The most obvious divergences in retention is between whites and Hispanics the courses in P3A, P4, P5, and P6 all of which are calculus-based where Hispanics score 12 to 36% lower than Whites. Again, this may be due to differences in math preparedness as well as the fact that the higher courses are increasingly conceptual. Since the same information is given to all students it is apparent that the Hispanic group, in general, processes the information less successfully. Due diligence should be paid to math preparedness, adequate early exposure to the sciences, stronger cohort groups, and improved counselor guidance in meeting prerequisites.

- Do your retention rates meet your expectations? Are there areas that need improvement? Although aggregate retention rates are at College levels (86%), disaggregated retention rates show a dispersion of results. Studies and initiatives need to be done to improve retention of Hispanics as a group.

A second concern is the drop off in students for online Phys V02/V03 from Fall to Spring primarily due to the online format and the level of difficulty of the subject matter. Frequent instructor monitoring of student progress could improved this situation.

- What initiative(s) could you develop based on what you have learned? Explain briefly. Initiatives need to be entered in more detail in Section V.
  - One possible initiative would be to work with counselors in coming up with a consistent screening of students for prerequisites in math and elementary physics (Phys V01), especially for Hispanics.
  - Another would be for Distance Ed to guide students in developing good online study habits.
  - Continued emphasis on the importance of cohort study groups
  - Diligent use of Early Alert for underperforming students by the Instructor

## 2. Success – Program and Course

Instructions:

Success refers to the number/percentage of students who pass the class with a grade of C or better or a “pass.”

- How does your program’s success rate compare to the college overall? Is comparing it to the college average appropriate or not? Please explain.
 

The overall success score for physics in FY13 was 80%. This substantially exceeds the College score of 71%. We believe that this is due to physics instructors working intently with students who stay the course to the end.
- In looking at your program’s success rate over the past three years, is there a trend?
 

Beginning in FY2010 there has been a rise in the success rate from 75% to the current 80%, possibly due in part to the implementation of SLOs and Program Review.
- In looking at the disaggregated data by gender, ethnicity, and age are there gaps in success for certain groups of students? Also, is the success rate going down for certain groups? If there are gaps, what might be done to address them?



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Comparing the overall Physics Hispanic/White success scores with College Hispanic/White success:

	Hispanic	White
Physics	74%	89%
College	68%	75%

We see that physics success scores for both Hispanics and White significantly exceed that of the College by 6% and 14%, respectively. This says that those students that are retained have more uniform learning skill sets. However, Hispanic success scores still substantially lag White scores by 15%.

Looking at success scores by disaggregate courses:

Course	Hispanics	Whites
P1	51%	52%
P2A	29%	43%
P3A	64%	100%
P2B	100%	100%
P3B	100%	100%
P4	66%	96%
P5	67%	89%
P6	83%	100%

The most obvious gap in success is between Hispanics and Whites where Hispanics consistently score about 20 - 35% lower. Since the same information is given to all students it is apparent that the Hispanic group, in general, processes the information less successfully. This may be due to differences in math preparedness, lack of previous exposure to the sciences, need to have stronger cohort groups, and improved counselor guidance in meeting prerequisites.

- Do your success rates at the program and college level meet your expectations? Are there areas that need improvement?

Although aggregate success rates (80%) are above College levels (71%), disaggregated retention rates show a dispersion of results. In particular, studies need to be done to improve the success rates of Hispanics as a group.

- What initiative(s) could you develop based on what you have learned? Explain briefly. Initiatives need to be entered in more detail in Section V.

- One possible initiative would be to work with counselors in coming up with a consistent screening of students for prerequisites in math and elementary physics (Phys V01), especially for Hispanics.
- Another would be for Distance Ed to guide students in developing good online study habits.
- Continued emphasis on the importance of cohort study groups
- Diligent use of Early Alert for underperforming students by the Instructor

### 3. Program Completion – for “Programs” with Degrees/Certificates Only (NA)

Instructions:

Completion refers to the number of students in the program receiving degrees and/or certificates. The Executive Team uses these data in creating its annual Planning Parameters. Are the numbers of degrees AND certificates (look at separately) awarded over the last four years increasing, decreasing, or staying about the same?

- In looking at the disaggregated data for completion over the past four years, are there gaps in success for certain groups of students? Also, is the completion rate going down for certain groups? If there are gaps, what might be done to address them?
- Do the completion rates meet your expectations? Why or why not?



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- What should be the goal for program completion? NOTE: ACCJC, our accrediting commission, has advised colleges that visiting teams will now be looking for program and institution-set standards for completion.
- What initiative(s) could you develop based on what you have learned? Explain briefly. Initiatives need to be entered in more detail in Section V and need to include a goal/performance indicator (i.e. Program completion will increase by 10% over the next 3 years).
- Programs that have awarded fewer than 12 certificates or degrees over the past four years may be placed on possible discontinuance. If this is the situation for your program, what changes can be made to increase the number? (i.e., Is it possible to combine programs in your area? Does the curriculum need updating?, etc.). In general, what can be done to increase the number of degrees and certificates awarded?

### C. Operating Data

#### 1. Demographics - Program and Course

Instructions:

Demographics refer to the students enrolled in the program/course.

- What does the data indicate/say about the students enrolled in the program/course? (Provide a **very brief summary**).  
*In FY2010 physics had 39% and 37% Hispanic and Whites, respectively. In FY2013 these numbers changed to 41% and 36% Hispanic and Whites, respectively. These numbers clearly show the increasing role of Hispanics in the physics discipline.  
Physics gender enrollment in FY2013 puts females at 30% and males at 70%. This is in contrast to the College gender enrollment in FY2013 of 54% females and 46% males.*
- How do your students compare to the college demographics? Is there a significant difference? What trends/changes do you see over the past three years?  
*The trend of increasing Hispanic enrollment over Whites is mirrored in the college demographics as well to a even greater extent (Hispanic 51% to White 32%). This trend has occurred over the past 3 years.*
- Is there a need to diversify the program in terms of age, gender or ethnicity?  
*At this point there is no absolute dominance of Hispanics over Whites, although if trends continue along its current course, and given the data that Hispanics, as a group, have lower retention and success scores than Whites, there will have to be focused effort to improve overall Hispanic performance in physics. The high male enrollment is not a result of college instruction, but a result of the male dominant profession.*
- What initiative(s) could you develop based on what you have learned from the data or other information? Explain briefly. Initiatives to be entered in more detail in Section V.  
*Organizations such as MESA and SHPE provide scholarships to underrepresented students, such as females in science. So, maintaining support of these organizations would be appropriate.*

#### 2. Budget

Instructions:

- Review of summarized budget information is required. The yellow and blue sections of your budget data provide summaries. Detail data is provided if you want to see additional information; however, reviewing the backup data is not required. Check the boxes below if you have no further comments to make.
- Have there been any significant changes in the budget over the past three years? Have these changes had a positive or negative effect on student learning? If additional funds are needed, explain why. Initiatives will be required to be noted in more detail in Section V.  
*At the end of FY 2011-2012 1 FTF faculty retired leaving 1 FTF in the Physics Department. During FY 2012-2013 the Department operated with 1 FTF faculty position plus PTF instructors. At the last Program Review, the Department was approved the hiring of 1 additional FTF position. This was completed in Spring 2013. Beginning Fall 2013 the Department has 2 FTF positions.*
- (Requests for contract/full time faculty or classified staff should be addressed in the resource section on the next page.)
- Please check the appropriate box below then provide your summary beginning on the next line.



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- Program members have reviewed the budget data.
- No comments or requests to make about the budget (*note: a request for 1 additional FTF position in physics & astronomy is being made in the 2013-2014 Physics Program Review*)

### 3. Productivity – Program and Course

*Instructions:*

*Productivity is based on the number of student contact hours that a faculty member teaches per week. The typical productivity factor is 525 (35 students/class x 5 classes x 3 hours per week = 525). Our overall college productivity goal for 2013-2014 is 530. Your analysis here should pertain to the number of students enrolled in your courses as that number relates to the program's productivity goal.*

*Are courses filling to the college productivity goal for your program? **YES** If that goal is inaccurate, what should the program and/or department productivity level be? How many students should be in each course? Are any of the productivity goals at the course level inaccurate? If so, what should they be?*

*See the productivity chart included in your data packet to help you determine the appropriate productivity level for your program/courses.*

- Do the enrollment/productivity ratios meet your expectations for the program as a whole? Do the enrollment/productivity ratios meet your expectations for individual courses? Why or why not?*
- How can you improve the performance overall or in some courses if they do not meet your expectations? (For example, at the course level, do some courses need to be offered or scheduled differently to try to increase enrollment?)*

*What initiative(s) could you like to develop based on what you have learned? Explain briefly. Initiatives will be required to be noted in more detail in Section V.*

#### Comments Regarding District Goals for Physics:

*The overall physics productivity level for FY13 was 565. This is to be compared with the 3 year average productivity level of 529. We attribute this increase to the fact that the FTF count for the previous 3 years was 2, whereas the FTF count for FY13 was 1.*

*There are some questions in the productivity goals by District at the course level. District set the goals at a level 450 across the board for all courses. This does not take into account the variations in enrollment from lecture classes to lab classes, nor does it take into account the normal decrease in student enrollment through the sequenced courses such as PhysV04, V05, and V06 due to transfer, and the fact that not all students are required to take the entire sequence.*

#### Initiative

*In order to ascertain a more accurate productivity goal a study would have to be done with respect to the enrollment pattern of students over the last several years for the courses, especially the sequenced courses that would allow a reasonable projection of what the productivity goal should be. This would have to be done through the historical data base by the EVP Student Learning Office (Michael Callahan).*

#### Comments on Existing Data Base for Physics:

*Overall, the Physics Department FY13 WSCH Ratio was **126% of stated District goals** which is an improvement from **FY12 119%** from the previous year. This is higher than the College WSCH of 100% and 101% of District Goals for FY12 and FY13, respectively.*

*In general, physics lecture courses populate from about 30 to 50 per section, with a smaller number for labs because of limitations on laboratory equipment.*



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We see that 80% of the physics courses offered scored healthy scores in % Goal ranging from 95-173% of the District goal of 450. 1 course scored a reasonable 87%.

Of the 2 courses ranking substantially less:

Physics V02BL and V03BL scored 65% and 64%, respectively– these courses are part of a fully online, concurrent 2 semester physics sequence for non-engineering majors: V02A/03A in Fall, and V03B/03B in Spring. We notice that the lab portions show lower scores than the lecture. This is due to the fact that V02 and V03 are a co-listed online course so that the student population is the sum of the two, while the labs are held in standard class labs which are limited by available instructional equipment.

Data shows, as it has in the past, a substantial drop in WSCH Ratios in going from the A to the B courses. As pointed out in the previous year's (FY12) Program Review, this is due to the notorious reduction in student count due to the online nature of the course.

### Initiative

The continuing initiative is to increase retention of V02A/V03A students as they cross over into V02B/V03B by reviewing the rigor of prerequisites to this course, and more use of Early Alert to students with lagging performance.

## D. Resources

### 1. Faculty

Instructions:

- How does your program/department's Full Time Equivalent Faculty (FTEF) compare to the college? (trends and ratios)  
From FY10 to FY12 the FTEF stayed level at 1.52. The in FY13 it dropped to 1.04 due to the retirement of a FT.
- Have there been any significant changes in (FTEF) for part and/or full time faculty over the last three years? If so, what are the effects of these changes?  
From FY10 to FY12 the PT stayed level at about 1.03. The in FY13 it increased to 1.34 due to PTF instructional backfilling created by the retirement of a FTF.
- Does your area have difficulty finding hourly instructors? Yes, finding qualified, reliable PTF is difficult.
- Is the program lacking faculty with a particular specialty? No
- Are there any specific accreditation requirements for FT faculty? No
- What contract faculty member(s) (if any) will you be requesting based on what you have learned? Explain briefly. Requests need to be entered in more detail in Section V.

The FT Physics Department Head plans to take retirement at the end of FY14. This will leave the Physics Department with 1 FT physics faculty who will have completed 1 full year at the College and who will be assuming Departmental duties. This will pose a challenging and somewhat unstable environment because there will be a high reliance on part-time faculty for both physics and astronomy. Based on this transition, the Physics/Astronomy Department requests the addition of 1 new F/T faculty position in Astronomy/Physics with an emphasis first on Astronomy and second on physics.

### 2. Classified Staff

Instructions:

- Have there been changes in the number of classified staff in the program/department over the last three years? No
- What has been the effect of decreases/increases in classified staff on the program or department?  
There was no physics lab technician during Summer Session 2013 to assist in faculty in teaching Phys V01. Although there was no disruption, there could have been a major problem in instruction had lab computers or other hardware been compromised. Also, if unattended it may mean that classes are not meeting the course outline of record. This has the potential to affect articulation.



## Physics Program Review

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- What classified positions (if any) will you be requesting based on the data/numbers/changes in program/department? Explain briefly. Requests need to be entered in more detail in Section V. *A request is being made to extend physics lab technician contract from 10 months to 12 months to cover the summer session period.*

### 3. Inventory

Instructions:

In the last year, a complete inventory has been taken of all college equipment. Detailed inventory lists, by room, are now available for your review. If you are requesting equipment, you need to review the inventory list and explain whether or not it is accurate. If you have any questions pertaining to inventory lists, please contact Dave Keebler.

- What equipment requests are you making (if any) to ensure that the program/department has functional, current, and otherwise adequate inventory to maintain a quality learning environment? Is the current equipment aging and need replacement or is new equipment needed? Is ongoing maintenance required for some equipment? If so explain. Requests need to be entered in more detail in Section V. *The Physics Department is making 3 requests for additional resources all of which will replace aging or outdated equipment:*

1. *18 new laboratory computers to replace the outdated computers used for physics labs in SCI-114 and SCI-118.*
2. *1 new high intensity projector to replace the outdated 12 year old projector in SCI- 118 which will increase viewability of the projection screen by 40%.*
3. *64 new lecture/lab swivel student chairs in SCI-114 and SCI-118 to replace the aging, original student chairs from 1997 at which time the Math-Science Building was first opened.*

### 4. Facilities or other Resource Requests *None*

Instructions:

- Is your program/department making any other requests for resources, including for facilities?
- Initiatives will be entered in more detail in Section V.
- Note: Any safety issues need to be reported immediately and not wait for program review. Safety issues may be reported here in addition to being reported to the dean.

### 5. Combined Initiatives

Instructions:

Does your program have any combined initiatives that address more than one data element? If so, explain and enter the initiative with more detail in Section V. *No*

## E. Other Program/Department Data (NA)

Instructions:

- Does the program/department have any other data from any other source (i.e., program generated, state generated, program accreditation, advisory committee, etc.) that should be reviewed/discussed in this program review?
- What does the data indicate about the students, student performance, or any other aspect of the program?
- What about the data encourages or gives you cause for concern?
- Does the data meet your expectations? Why or why not?
- What initiative(s) could you develop based on what you have learned from the data. Explain briefly. Initiative to be entered in more detail in Section V.
- Provide the data in an attachment or provide an online link.

## Section IIIb – Other Program Goals and Initiatives

### A. Other Program Goals *None*

Instructions: Aside from the goals determined from looking at specific institutional and program data, are there any other program goals for which you may or may not request funding? If so, please explain and enter it as an initiative with more detail in Section V. Such goals may include:



## Physics Program Review

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- Innovation
- Legislation
- Regulations
- Industry Standards
- New Technology
- Professional Development
- Advisory Committee Recommendations

### **Section IV – Program Vitality (Academic Senate Approved Self-Evaluation)**

*Instructions:*

Complete the Rubric for Instructional Program Vitality (Appendix C or D) created by the Academic Senate. It is a tool for further self-evaluation of your program. This rubric will be used in conjunction with (not in place of) resource requests and provide further input for any programs being considered for program discontinuance. This form must be submitted with your program review document. Answer the following question after completing the rubric:

- What is your score? **24/26**
- What does that score mean to you? **The Physics Department is currently vibrant.**

### **Section V - Initiatives**

*Instructions:*

Please list your initiatives below, including any you are carrying forward from prior years. Add as many as needed. Deans/division offices will put the information onto the initiatives charts. Every program/department needs initiatives that do not require resources.

Ranking:

The ranking provided below indicated the program/department's ranking. The initiatives will be ranked again later at the division level before going to the appropriate committees (i.e. technology) for additional ranking.

**R** = Required – mandated or unavoidable needs (litigation, contracts, unsafe to operate conditions, etc.)

**H** = High – Approximately 1/3 of the total program/department/division's initiatives by resource category

**M** = Medium – Approximately 1/3 of the total program/department/division's initiative by resource category

**L** = Low – Approximately 1/3 of the total program/department/division's initiatives by resource category

*Example:*

**Initiative:** Provide a brief title

**Initiative ID:** (i.e. CD1301 = Child Development, 2013, first initiative. Maintain initiative numbers from prior program review if any are being carried forward into this new year.)

**Link to data (Required):** From which area of data is this request associated? Within the category, be specific. (i.e. Success data for a specific course, PSLO #1, . . . , etc.)

**Expected Benefits:** What benefits to student learning or completion, etc. do you anticipate?

**Goal:** What do you believe needs to occur? (i.e. raise student success in \_\_\_\_ course)

**Performance Indicator:** What do you see as a realistic goal? (i.e. a 5% increase in student success)

**Timeline:** When do you expect to achieve this success within in the next three years? (i.e. by May 2015). These timelines will create a multi-year plan for your program/department. (a drop down menu is provided.)

**Funding Source Category:** (a drop down menu is provided)

- No new resources
- Additional general funds for hourly instruction, supplies and services (includes maintenance contracts)
- College equipment funds (non computer)
- Technology funds
- Facilities funds





## Physics Program Review

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- Staffing resources
- Grant funds

**Ranking:** (i.e. H) (a drop down menu is provided) **Note:** Your program/department will need to rank its initiatives (1/3 High, 1/3 Medium, 1/3 Low). These initiatives will be further ranked by the division.

Begin listing your initiatives here, including any you are carrying forward from prior years. Please note that every program/department needs to include initiatives that do not require resources. You may copy and paste this section

**A. Initiative:** *New FTF in Astronomy/Physics*

**Initiative ID:** *Phys1301*

**Link to Data:** *Section D Resources*

**Expected Benefits:** *The requested position will backfill the retirement of the current Physics Department Chair, Dr. Steve Quon, in May 2014. The position will have a **first emphasis on astronomy**, and **second a emphasis on physics** so as to complement Dr. Jeffrey Wood, the remaining FTF in physics. The model of 1 astronomy/physics FTF + 1 physics FTF has a successful 7 year precedence with Dr. Steve Quon (physics) + Mr. Dave Doreo (astronomy/physics).*

*Going forward, the Department will have 2 FTF positions plus a cadre of PTF enabling the Physics/Astronomy Department to have a stable program and curriculum as well as the potential to grow the program. **Cost: \$110,000***

**Goal:** *The goal will be to gain approval of hiring, and then to perform a Spring 2014 interview process for the new position to begin Fall 2014*

**Performance Indicator:** *3 astronomy courses will be regularly taught by new faculty along with a complementary physics course.*

**Timeline:** 2014-2015

**Funding Resource Category:** Staffing Funds

**Ranking:** H

**B. Initiative:** *New Physics Lab Computers*

**Initiative ID:** *Phys1302*

**Link to Data:** *Section D Resources*

**Expected Benefits:** *18 new computers to replace the outdated physics lab PCs will enhance student laboratory learning experience by eliminating time-consuming PC lockups due to outdated operating system and motherboard, and avert catastrophic shutdowns during instructional time. These new computers which are also used in astronomy labs will prevent mismatches between instructional S/W and the PC operating system. **Cost: \$28,000***

**Goal:** *The goal will be to upgrade all laboratory physics/astronomy computers by 2014-2015 to instructional satisfaction with the assistance of IT.*

**Performance Indicator:** *Elimination of computer lockups during booting and instructional use for both physics and astronomy.*

**Timeline:** 2014-2015

**Funding Resource Category:** Technology Funds





## Physics Program Review

2013-2014

Ranking: H

**C. Initiative:** Instructional Lab Technician II – Physical Sciences

**Initiative ID:** *Phys1303*

**Link to Data:** *Section D Resources*

**Expected Benefits:** *The benefit of extending current lab tech performance period from 10 to 12 months per year will be to meet articulation of physics courses by having properly classified support staff for laboratories, maintain inventory, address health and safety issues, and maintain and repair equipment critical to the Physics program. Without a lab tech to address these responsibilities, some of the equipment will fall into disrepair and some of it will be sent to outside vendors for repair. The added maintenance cost offsets salary savings and reduces the effectiveness of the Physics courses. **Cost: \$8406***

**Goal:** *meet physics articulation requirements, maintain physics lab in full functioning order throughout the year.*

**Performance Indicator:** *Laboratory technician will be available to support labs and perform general maintenance and repair of laboratory equipment and supplies.*

**Timeline:** 2014-2015

**Funding Resource Category:** Staffing Funds

Ranking: H

**D. Initiative:** *High Intensity Projector*

**Initiative ID:** *Phys1304*

**Link to Data:** *Section D Resources*

**Expected Benefits:** *The high intensity projector which will replace the outdated existing classroom projector will enable students to see the projection screen more clearly as a part of classroom lecture. **Cost: \$5100***

**Goal:** *To enable students to see the projection screen in SCI-118 by replacing the current projector which has an intensity of 3000 lumens with a up-to-date projector with an intensity of 5000 lumens.*

**Performance Indicator:** *The classroom will not have to be totally darkened to see the projection screen as is the situation currently.*

**Timeline:** 2014-2015

**Funding Resource Category:** Equipment-non computer

Ranking: M

**E. Initiative:** *Physics Lecture/Lab Student Swivel Chairs*

**Initiative ID:** *Phys1305*

**Link to Data:** *Section D Resources*

**Expected Benefits:** *The physics lecture/lab student chairs in SCI-114 and SCI-118 are 16 years old and are showing signs of aging and breakage. 64 new student chairs are needed also to insure student safety. **Cost: \$18,000***

**Goal:** *Replace all student swivel chairs in SCI-114 and 118 with new swivel chairs.*

**Performance Indicator:** *Chairs in SCI-114 and 118 are replaced with new chairs*

**Timeline:** 2014-2015

**Funding Resource Category:** Equipment-non computer

Ranking: M



## Physics Program Review

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- F. Initiative: Increase of Testing Center Hours**  
Initiative ID: *Phys1306*  
Link to Data: *Section D Resources*  
Expected Benefits: *Physics requests that the testing center hours be increased from a 40% position (16 hours per week) to 100% (40 hours per week). This is to expand student accessibility to the testing center for all physics classes. **Cost: \$0***  
Goal: *Increase student accessibility to the testing center.*  
Performance Indicator: *Students will be able to take exams and makeup exams in a timely manner.*  
Timeline: 2014-2015  
Funding Resource Category: No new resources needed  
Ranking: H
- G. Initiative: Reinforcement of Physics Prerequisites by Counselors**  
Initiative ID: *Phys1307*  
Link to Data: *Section B Performance Data*  
Expected Benefits: *Retention and Success scores of Hispanic students should rise by strictly enforcing prerequisites to physics courses. **Cost: \$0***  
Goal: *Improve Retention and Success scores of Hispanics by 3% by 2015-2016.*  
Performance Indicator: *Program Review Retention and Success Scores*  
Timeline: 2015-2016  
Funding Resource Category: No new resources needed  
Ranking: M
- H. Initiative: Improve Student Online Preparedness Through Distance Ed Program**  
Initiative ID: *Phys1308*  
Link to Data: *Section B Performance Data*  
Expected Benefits: *Retention and Success scores of online physics students should rise by addressing their preparation and expectations of online courses. **Cost: \$0***  
Goal: *Improve Retention and Success scores of online physics students by 3% by 2015-2016.*  
Performance Indicator: *Program Review Retention and Success Scores*  
Timeline: 2015-2016  
Funding Resource Category: No new resources needed  
Ranking: M
- I. Initiative: Continued Use of Cohort Study Groups**  
Initiative ID: *Phys1309*  
Link to Data: *Section B Performance Data*  
Expected Benefits: *Retention and Success scores of Hispanic students should rise by strongly encouraging participation in cohort study groups. **Cost: \$0***  
Goal: *Improve Retention and Success scores of Hispanics by 3% by 2015-2016.*  
Performance Indicator: *Program Review Retention and Success Scores*  
Timeline: 2015-2016  
Funding Resource Category: No new resources needed  
Ranking: M

### Section VI – Process Assessment

Instructions: Please answer the following questions:



## Physics Program Review

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### A. How have the changes in the program review process this year worked for your area?

- 1. The summary of Program Data has speeded up the process significantly by eliminating the necessity of thumbing through unnecessary pages in previous Program Reviews.*
- 2. The questions posed have been more to the point. But, on the other hand, the questions have been more granular such as student retention/success based on ethnicity which leads to more detailed initiatives. Net result: good in the long, long run, however at the cost of generating more work for the departments.*

### B. How would you improve the program review process based on this experience?

*I would suggest trying to streamline the department response form by having more check boxes rather than open-ended narrative responses. Also, have data from previous years presented graphically over a rolling 3-year period. This would more clearly indicate trends, success of rightly chosen initiatives, or lack of success of marginally chosen initiatives.*

### C. Appeals

After the program review process is complete, your program has the right to appeal the ranking of initiatives (i.e. initiatives that should have been ranked high but were not, initiatives that were ranked high but should not have been), the division's decision to support/not support program discontinuance, or the process (either within the department/program or the division) itself.

If you choose to appeal, please complete the Appeals form (Appendix E) that explains and supports your position. Forms are located at the Program Review VC website.

The appeal will be handled at the next higher level of the program review process.

## **VII – Submission Verification**

*Instructions: Please complete the following section:*

**Program/Department:** *Physics*

**Preparer:** *Dr. Steve Quon*

**Dates met (include email discussions):** *Meetings: 9/27, 9/20 (SQuon, JWood); e-mails: 9/18 (Quon, Wood), 9/17 (Wood, Quon), 9/8 (Quon, Molony), 9/7 (Wood, Quon), 9/5 (Synnes, Quon), 9/4 (Quon, Wood, Terry, Synnes, Lovestedt), 8/26 (Wood, Quon)*

**List of Faculty who participated in the program Review Process:**

*Dr. Steve Quon, Dr. Jeff Wood, Dr. Colin Terry, Dr. Jeff Molony, Dale Synnes, Stephan Lovestedt*

**Preparer Verification:** I verify that this program document was completed in accordance with the program review process. *Dr. Steve Quon, Chair Physics & Astronomy*



## Physics Program Review

2013-2014

**Dean Verification:** I verify that I have reviewed this program review document and find it complete.

Dean may also provide comments (optional):



# Program Review Process Map

**I . Status report and accomplishments from prior year**

**II. Description**

**III(a). Data**  
 1. Review  
 2. Analysis

A. SLO's	B. Success	C. Operating	D. Resources	E. Other
	▪ Retention	▪ Demographic	▪ Faculty	Data
	▪ Success	▪ Budget	▪ Classified Staff	
	▪ Completion	▪ Enrollment/Productivity	▪ Inventory	
			▪ Facilities or other Resource Requests	
			▪ Combined Initiatives	

**III(b). Other program goals and initiatives**

(Innovations, regulations, legislation, new technology, industry standards, professional development, or advisory committee recommendations, etc.)

**IV. Program vitality-(Academic Senate rubric)**

**V. Summary of initiatives and requests**  
 Minority reports if any

**VI. Process assessment**

**VII. Verification of review**



## Physics Program Review

2013-2014

### Program Review Resource Initiatives Guidelines

#### **WHAT TO LEAVE OUT**

*The purpose of this document is to clarify what kinds of resource requests should NOT be included in the Program Review Document as initiatives.*

<p>The table below summarizes the types of resources that DO NOT need to be included in the Department Plans. The “Who to Contact” column lists who to contact when the resources or services are needed.</p>		
<b>Excluded Items</b>	<b>Who to Contact</b>	<b>Explanation</b>
Safety Issues, including but not limited to broken chairs or desks, etc. that can be resolved through the normal process.	Dean, M&O or Appropriate Office	All safety issues should be immediately reported to the Dean, M&O, or appropriate department.
EAC Accommodations that can be resolved through the normal process.	DSPS and Dean	Any accommodation should have the guidance of the DSPS office.
Routine M&O maintenance & repair (light fixtures not working, holes in walls, locks, cleaning, broken desks or chairs, etc.) that can be resolved through the normal process.	M&O or Division Office	Complete an email request to <a href="mailto:vcmaintenance@vccd.edu">vcmaintenance@vccd.edu</a> or notify your division office so they can handle for you.
Cyclical Maintenance (painting, flooring, carpet shampooed, windows, etc.) that can be resolved through the normal process.	M&O or Division Office	Complete an email request to <a href="mailto:vcmaintenance@vccd.edu">vcmaintenance@vccd.edu</a> or notify your division office so they can handle for you.
Classroom technology equipment repairs (projector light bulb out, video screen not working, computer not working, existing software updates) that can be resolved through the normal process.	Campus Technology Center or Division Office	Complete an email request to <a href="mailto:vchelpdesk@vccd.edu">vchelpdesk@vccd.edu</a> or notify your division office so they can handle for you.
Section Offerings/ Change of classrooms	Dean/Department Chair	Dean will take requests through the enrollment management process.
Substitutes	Dean	Dean will process in accordance with existing guidelines.
Conferences, Meetings, Individual Training	Professional Development Committee	Requests should first be addressed by the PDC and only go through program review if costs cannot be covered.



## Physics Program Review

2013-2014

### Program Review Resource Initiatives Guidelines

#### WHAT TO LEAVE IN

*The purpose of this document is to clarify what kinds of resource requests should be included in the Program Review Document as initiative.*

<p>Faculty and Staff from each department will meet as a division to prioritize initiatives resulting from the Program Review process. The initiatives will then go to each respective governance groups such as Staffing Priorities, Technology Committee, Budget Resource Council, etc., for further prioritization. Administrative Council and the Executive Team will develop the final prioritized list and distribute for implementation.</p>		
Included Items	Committee Group	Explanation
Replacement of classroom furniture	Facilities Oversight Group	Only when it is an entire classroom/lab/office at a time or a safety or disability issue that has not been resolve through the normal process.
Upgrade and/or replacement of computer and other technological equipment	Technology Committee	These items will go on to a list for replacement or upgrade per the technology plan.
New Equipment/Furniture/classroom items (i.e. microscope, etc.)	Budget Resource Council	These items must be approved included in a plan to improve student learning and/or services.
Buildings/Office Space (new renovation, modernization)	Division Dean	The division dean will work with Administrative Council and the Fog Committee to pursue the projects.
New Software	Technology Committee	These items must be approved included in a plan to improve student learning and/or services.
New Faculty Positions	Faculty Staffing Priorities	Requests for new positions will compiled on a list and sent to the FSP committee.
New Classified Positions/or increase in percentage of existing positions.	Classified Staffing Priorities	Requests for classified positions will compiled on a list and sent to the CSP committee.
New Programs/certificates	Curriculum Committee	These program/certificates must be approved by the curriculum committee.
Training and Professional Development above normal	Professional Development/Budget Resource Council	These are items over and above what the PDC can provide.
Expansion/Conversion to Distance Learning	Dean of Distance Learning and Distance Learning Committee	Requests will be compiled and sent to the committee process for discussion.
Service Agreements	Budget Resource Council	Requests must include justification.
Instructional Materials and Office Supplies/Advertising/Student Workers/Printing/Duplicating	Budget Resource Council/Dean	These items must include a compelling reason and be above what the normal budget will allow.



# Physics Program Review

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Appendix-C

## Rubric for Instructional Program Vitality-Academic (non-CTE)

The purpose of this rubric is to aid a program in thoughtful, meaningful and reflective self-evaluation. This rubric is also a defensible and objective way at looking at program viability and efficacy. This rubric should not be used as the mechanism to justify funding requests or for resource allocation. Lastly, a low score on this rubric does not preclude a program from requesting documented and necessary resource requests in other parts of this program review document.

### Academic programs:

Point Value	Element	Score
Up to 6	<b>Enrollment demand</b> <sup>1</sup>	
	A "6" would be the ability to fill 100% of sections prior to the start of the semester.	6
	A "5" would be the ability to fill 95% or greater of class sections prior to the start of the semester for the past two terms.	
	A "4" would be the ability to fill 90% or greater of class sections prior to the start of a semester for the past two terms.	
	A "3" would be the ability to fill 85% or greater of class sections prior to the start of a semester for the past two terms.	
	A "2" would be the ability to fill 80% or greater of class sections prior to the start of a semester for the past two terms.	
	A "1" would be the ability to fill 75% or greater of class sections prior to the start of a semester for the past two terms.	
	A "0" would be the ability to fill less than 75% of class sections prior to the start of a semester for the past two terms.	
Up to 3	<b>Sufficient capital / human resources to maintain the program, as defined by:</b>	
	<b>Ability to find qualified instructors</b>	
	A "3" would indicate that no classes have been canceled due to the inability to find qualified instructors.	3
	A "2" would indicate that rarely but occasionally have classes been canceled due to the inability to find qualified instructors.	
	A "1" would indicate that a significant number of sections in the past year have been canceled due to the inability to find qualified instructors.	
Up to 3	<b>Financial resources, equipment, space</b>	
	A "3" would indicate that the program is fully supported with regards to dedicated class / lab space, supplies and equipment.	3
	A "2" would indicate that the program is partially supported with regards to dedicated class / lab space, supplies and equipment	
	A "1" would indicate that the program is minimally supported with regards to dedicate class / lab space, supplies and equipment.	
	A "0" would indicate that there is no college support with regards to class / lab space, supplies and equipment.	
Up to 4	<b>Agreed-upon productivity rate</b> <sup>2</sup>	
	A "4" would indicate that a program has met or exceeded its productivity rate.	
	A "3" would indicate that a program is at 90% or greater of its productivity rate.	3

<sup>1</sup> Enrollment demand is determined by the ability to fill classes.

<sup>2</sup> Productivity rate is defined as **WSCH/FTEF** as determined by the program faculty at the college.





## Physics Program Review

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A "2" would indicate that a program is at 80% or greater of its productivity rate.	
A "1" would indicate that a program is at 70% or greater of its productivity rate.	
A "0" would indicate that a program is at less than 70% of its productivity rate.	

<b>Up to 4</b>	<b>Course completion rate</b> <sup>3</sup>	
	A "4" would indicate that the program's course completion rate is greater than 5 percentage points or greater than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "3" would indicate the program's course completion rate is equal to or greater than the most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	3
	A "2" would indicate that a program's course completion rate is up to 2 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that a program's course completion rate is up to 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that a program's course completion rate is greater than 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 3</b>	<b>Success rate</b> <sup>4</sup>	
	A "3" would indicate that the sum of the program's course success rates for the past academic year is greater than the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	3
	A "2" would indicate that the sum of the program's success rates for the past academic year is within 4 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that the sum of the program's success rates for the past academic year is within 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that the sum of the program's success rates for the past academic year is lesser than 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 3</b>	<b>Ongoing and active participation in SLO assessment process</b>	
	A "3" would indicate that all required courses, programs and institutional level SLOs as indicated by the programs SLO mapping document found in TracDat have been assessed on a regular and robust manner within the past academic year.	3
	A "2" would indicate that 95% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
	A "1" would indicate that 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
	A "0" would indicate than less than 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	

Note rationale on next page.

<sup>3</sup> As defined by the RP Group, the course completion rate is the "percentage of students who do not withdraw from class and who receive a valid grade."

<sup>4</sup> As defined by the RP Group, the success rate is "the percentage of students who receive a passing/satisfactory grade" notation of A, B, C, P, IB, or IC.



## Physics Program Review

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In no more than two to three sentences, supply a narrative explanation, rationale or justification for the score you provided, especially for programs with a score of less than 22:

*Based on Retention, Success, and Productivity scores, the overall score of Physics was 24/26. Physics scored top rankings in all categories except for Course Completion Rate and agreed on Productivity Rate where scores were at or slightly less than District Goals.*

Score interpretation, academic programs:

- |                 |  |
|-----------------|--|
| <b>22-26</b>    | Program is current and vibrant with no further action recommended<br>(Physics score of 24) |
| <b>18-21</b>    | Recommendation to attempt to strengthen program  |
| <b>Below 18</b> | Recommendation to consider discontinuation of the program                                  |



## Physics Program Review

2013-2014

### Rubric for Instructional Program Vitality-CTE (NA)

The purpose of this rubric is to aid a program in thoughtful, meaningful and reflective self-evaluation. This rubric is also a defensible and objective way at looking at program viability and efficacy. This rubric should not be used as the mechanism to justify funding requests or for resource allocation. Lastly, a low score on this rubric does not preclude a program from requesting documented and necessary resource requests in other parts of this program review document.

#### CTE programs:

Point Value	Element	Score
<b>Up to 6</b>	<b>Enrollment demand / Fill rate</b> <sup>5</sup>	
	A "6" would be the ability to fill 100% of sections prior to the start of the semester.	
	A "5" would be the ability to fill 95% or greater of class sections prior to the start of the semester for the past two terms.	
	A "4" would be the ability to fill 90% or greater of class sections prior to the start of a semester for the past two terms.	
	A "3" would be the ability to fill 85% or greater of class sections prior to the start of a semester for the past two terms.	
	A "2" would be the ability to fill 80% or greater of class sections prior to the start of a semester for the past two terms.	
	A "1" would be the ability to fill 75% or greater of class sections prior to the start of a semester for the past two terms.	
	A "0" would be the ability to fill less than 75% of class sections prior to the start of a semester for the past two terms.	
	<b>Sufficient capital / human resources to maintain the program, as defined by:</b>	
<b>Up to 3</b>	<b>Ability to find qualified instructors</b>	
	A "3" would indicate that no classes have been canceled due to the inability to find qualified instructors.	
	A "2" would indicate that rarely but occasionally have classes been canceled due to the inability to find qualified instructors.	
	A "1" would indicate that a significant number of sections in the past year have been canceled due to the inability to find qualified instructors.	
	A "0" would indicate that classes are not even scheduled due to the inability to find qualified instructors.	
<b>Up to 3</b>	<b>Financial resources, equipment, space</b>	
	A "3" would indicate that the program is fully supported with regards to dedicated class / lab space, supplies and equipment.	
	A "2" would indicate that the program is partially supported with regards to dedicated class / lab space, supplies and equipment	
	A "1" would indicate that the program is minimally supported with regards to dedicate class / lab space, supplies and equipment.	
	A "0" would indicate that there is no college support with regards to class / lab space, supplies and equipment.	
<b>Up to 4</b>	<b>Agreed-upon productivity rate</b> <sup>6</sup>	
	A "4" would indicate that a program has met or exceeded its productivity rate.	
	A "3" would indicate that a program is at 90% or greater of its productivity rate.	
	A "2" would indicate that a program is at 80% or greater of its productivity rate.	
	A "1" would indicate that a program is at 70% or greater of its productivity rate.	

<sup>5</sup> Enrollment demand is determined by the ability to fill classes.

<sup>6</sup> Productivity rate is defined as **WSCH/FTEF** as determined by the program faculty at the college.



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A "0" would indicate that a program is at less than 70% of its productivity rate.	
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<b>Up to 3</b>	<b>Program Completion</b>	
	A "3" would indicate that the program has granted 25 or greater combined degrees, certificates and proficiency awards over the past four academic years.	
	A "2" would indicate that the program has granted 20-24 combined degrees, certificates and proficiency awards over the past four academic years.	
	A "1" would indicate that the program has granted 15-19 combined degrees, certificates and proficiency awards over the past four academic years.	
	A "0" would indicate that the program has granted fewer than 14 combined degrees, certificates and proficiency awards over the past four academic years.	

<b>Up to 3</b>	<b>Employment Outlook for Students/Job Market Relevance</b>	
	A "3" would indicate that the employment outlook for students in the program is greater than the projected county-wide employment average for the next three years <i>and/or</i> "leavers" of the program make more money in their jobs based on taking courses at the college (with or without having completed a degree) than had they not taken courses at the college.	
	A "2" would indicate the employment outlook for students in the program is about average with the projected county-wide employment average for the next three years.	
	A "1" would indicate that the employment outlook for students in the program is less than the projected county-wide employment average for the next three years.	
	A "0" would indicate that the employment outlook for students in the program is significantly less than the projected county-wide employment average for the next three years.	

<b>Up to 3</b>	<b>Success rate<sup>7</sup></b>	
	A "3" would indicate that the sum of the program's course success rates for the past academic year is greater than the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "2" would indicate that the sum of the program's success rates for the past academic year is within 4 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that the sum of the program's success rates for the past academic year is within 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that the sum of the program's success rates for the past academic year is lesser than 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 4</b>	<b>Course completion rate<sup>8</sup></b>	
	A "4" would indicate that the program's course completion rate is greater than 5 percentage points or greater than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "3" would indicate the program's course completion rate is equal to or greater than the most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "2" would indicate that a program's course completion rate is up to 2 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that a program's course completion rate is up to 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that a program's course completion rate is greater than 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	

<sup>7</sup> As defined by the RP Group, the success rate is "the percentage of students who receive a passing/satisfactory grade" notation of A, B, C, P, IB, or IC.

<sup>8</sup> As defined by the RP Group, the course completion rate is the "percentage of students who do not withdraw from class and who receive a valid grade."



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<b>Up to 3</b>	<b>Ongoing and active participation in SLO assessment process</b>	
	A "3" would indicate that all required courses, programs and institutional level SLOs as indicated by the programs SLO mapping document found in TracDat have been assessed on a regular and robust manner within the past academic year.	
	A "2" would indicate that 95% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
	A "1" would indicate that 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
	A "0" would indicate that less than 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	

In no more than two to three sentences, supply a narrative explanation, rationale or justification for the score you provided, especially for programs with a score of less than 22:

Score interpretation, academic programs:

- 27-32**            Program is current and vibrant with no further action recommended
- 22-26**            Recommendation to attempt to strengthen program
- Below 22**        Recommendation to consider discontinuation of the program



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### APPEAL FORM

(Due to Office of Institutional Effectiveness by November 8)

The program review appeals process is available to any faculty, staff, or administrator who feels strongly that the prioritization of initiatives (i.e. initiatives that were not ranked high but should have been, initiatives that were ranked high but should not have been), the decision to support or not support program discontinuance, or the process followed by the division should be reviewed by the College Planning Council.

Appeal submitted by: (name and program) \_\_\_\_\_

Date: \_\_\_\_\_

- Category for appeal:
- Faculty
  - Personnel – Other
  - Equipment- Computer
  - Equipment – Other
  - Facilities
  - Operating Budget
  - Program Discontinuance
  - Other (Please specify)

Briefly explain the process that was used to prioritize the initiative(s) being appealed:

Briefly explain the rationale for asking that the prioritization of an initiative/resource request be changed:

**Appeals will be heard by the College Planning Council on November 9, 2011 at its regularly scheduled meeting (3:00 – 5:00 p.m.). You will be notified of your time to present.**