**Palomar College – Program Review and Planning**

**Instructional Programs**

**YEAR 1**

**Academic Year** **2012-13**

**Purpose of Program Review and Planning:** The institution assesses progress toward achieving stated goals and makes decisions regarding the improvement of institutional effectiveness in an on-going and systematic cycle of evaluation, integrated planning, resource allocation, implementation, and re-evaluation. Evaluation is based on analyses of both quantitative and qualitative data (ACCJC/WASC, Standard I, B.3.)

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| **Discipline: Physics** | **09/14/2012** |
| **Instructional Discipline Reviewed (Each discipline is required to complete a Program Review)** | **Please Add Date (00/00/2012)** |

**STEP I. ANALYSIS**

|  |  |  |  |  |  |  |  |
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|   |   |  |  |  | **<<Prelim>>** | ◄▬ Preliminary Fall 2011 data are as of 1/31/2012 |   |
|   |   | **Fall 2008** | **Fall 2009** | **Fall 2010** | **Fall 2011** | **Definitions** |
| **Enrollment at Census** | 557 | 565 | 574 | 611 | *Self Explanatory* |
| **Census Enrollment Load %** | 94.88% | 95.60% | 96.30% | 95.02% | Enrollment at Census Divided By Sum of Caps (aka "Seats") |
| **WSCH** | 1,822 | 1,853 | 1,883 | 1,995 | Weekly Student Contact Hours |
| **FTES** | 60.74 | 61.77 | 62.75 | 66.52 | One Full-Time Equivalent Student = 30 WSCH |
| **Total FTEF** | 4.07 | 4.07 | 4.07 | 4.27 | Total Full-Time Equivalent Faculty |
| **WSCH/FTEF** | 448 | 456 | 463 | 468 | WSCH Generated per Full-Time Equivalent Faculty Member |
| **Full-time FTEF** | 2.20 | 2.20 | 2.20 | 2.20 | FTEF from Contract Faculty |
| **Hourly FTEF** | 1.40 | 1.40 | 1.40 | 1.20 | FTEF from Hourly Faculty |
| **Overload FTEF** | 0.47 | 0.47 | 0.47 | 0.87 | FTEF from Contract Faculty Overload |
| **Part-Time FTEF** | 1.87 | 1.87 | 1.87 | 2.07 | Hourly FTEF + Overload FTEF |
| **Part-Time/(Total FTEF) %** | 45.90% | 45.90% | 45.90% | 48.44% | Percent of Total FTEF Taught By Part-Time Faculty |
| Student Achievement: **Non Distance Education Courses** |   |   | Those NOT taught via Distance Ed (see below) methods of instruction |
|  **● Retention Rate** | 90.46% | 92.14% | 95.32% | 92.43% | Non-W Eligible Grades (see next line) Divided by All Eligible Grades |
|  **● Success Rate** | 57.25% | 60.71% | 69.78% | 65.46% | A,B,C,CR/P Grades Divided By A,B,C,CR/P,D,F,FW,NC/NP,W Grades |
| Student Achievement: **Distance Education Courses** |   |   | Those taught via Internet, TV or non line-of-sight interactive methods |
|  **● Retention Rate** | - | - | - | - | Non-W Eligible Grades (see next line) Divided by All Eligible Grades |
|  **● Success Rate** | - | - | - | - | A,B,C,CR/P Grades Divided By A,B,C,CR/P,D,F,FW,NC/NP,W Grades |
| **Degrees Awarded** |  - |  - |  - | N/A\* | Degree Counts Are for the Full Academic Year (thus, \*N/A for 2011-12) |
| **Certificates Awarded:** |  - |  - |  - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2011-12) |
| **- Under 18 Units** |  - |  - |  - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2011-12) |
| **- 18 or More Units** |  - |  - |  - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2011-12) |

| **I. A. Reflect upon and provide an analysis of the four years of data above (for a sample analysis see** <http://www.palomar.edu/irp/11PRYear1/sampleforIA.pdf>) |
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| **Analysis shows the enrollment is steady increasing and hence increase in WSCH/FTEF despite the fact that the total number of class offerings was drastically cut. We believe this is due to the economic depression and our effort to maintain high quality of education. This indicates that our department is able to grow if we offer more classes.**  |

| **I. B. Please summarize the findings of Course AND Program SLO assessments conducted by your discipline. (For examples, see** <http://www.palomar.edu/irp/11PRYear1/PRPsloExamples.pdf>) |
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| **I.B.1 Summarize Course SLO assessment results beginning on the next line.** **Assessment was embedded in Physics 230, Calculus based Physics course. Students were asked to calculate linear velocities of objects before and after collision. Furthermore, they were asked to present Conservation of Linear Momentum of the system in both X and Y directions. This was done by a lab exercise. The lab #9 was chosen for this assessment. The results showed that number of students who calculated velocities correctly: 58 out of 63, number of students who calculated conservation of Linear momentum correctly: 47 out of 63. Assessment results indicated that students had the most difficulty correctly analizing conservation of angular momentum.** **I.B.2 Summarize Program SLO assessment results beginning on the next line.** |

| **I. C. Reflect upon the SLO assessment findings in Box B above. Discuss overall observations and any areas of concern or noteworthy trends.**  **(For examples of such analysis, see** <http://www.palomar.edu/irp/11PRYear1/PRPsloExamples.pdf>) |
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| **I.C.1 Please reflect upon the Course SLO findings in Box B (above) beginning on the next line.****Implementation of hands-on activities in order to enforce understanding of concepts and topics should be considered for greater success.** **I.C.2 And, please reflect upon the Program SLO findings in Box B beginning on the next line.** |

| **I. D. For Career Technical disciplines only, please provide a brief summary of the labor market outlook. This data can be found at** [**http://www.labormarketinfo.edd.ca.gov/**](http://www.labormarketinfo.edd.ca.gov/) **Please include job projections and trends that may influence major curriculum revisions.** |
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| **STEP II. PLANNING****Reflecting on the 4-year trend data, the SLO assessment results, and the college’s** [**Strategic Plan 2013**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**, describe/discuss the discipline planning related to the following: (For sample reflections, see** <http://www.palomar.edu/irp/11PRYear1/samplesforII.pdf>) |

| **II. A. Curriculum, programs, certificates and degrees (consider changes due to Title 5 or other regulations, CSU/UC transfer language updates, articulation updates, student retention or success rates, workforce and labor market projections, certificate or degree completions, etc.)** |
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| **WSCH, student retention rate and success rate are increasing steadily. We believe these are due to (a) Engineering Club, PEPSO that physics students get involved in heavily, (b) SI leaders and LA's who puts enormous amount of time into helping students, and (c) both full time and part time instructors who devote their times including weekends to help students.** **We meet regularly with CSUSM faculty to build bridges for students, align curriculum with CSUSM to promote students transfer. We have increased the number of transfers by at least five times compared to the previous years.**  |

| **II. B. Class scheduling (consider enrollment trends, growth, course rotation, sequencing, Center/Site offerings, comprehensiveness, etc.)** |
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| **We have been trying to schedule our courses such that they do not conflict with other departments. We noticed that there are less students who experience conflicts. However, we still have one or two students who can not avoid the conflict per year. We will keep working on this matter.**  |

| **II. C. Faculty (Briefly discuss the faculty hiring needs for this discipline. This discussion does not replace the requirement to submit a Rationale Form for Faculty Hiring to IPC.)** |
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| **More than 48% of FTEF is adjunct, well over the 25% mandated by CA law.** |

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| **STEP III. RESOURCE REQUESTS FOR DISCIPLINE:**  |
| **III. A. Describe the resources necessary to successfully implement the planning described above. Provide a detailed rationale for each request by referring to the analyses of data and SLO assessment results in Step I and/or to any other evidence not apparent in the data or SLO Assessment** results. NOTE: Do **NOT** include Resource Requests that duplicate requests from other disciplines In your department. Place requests common to two or more disciplines on the form: ACADEMIC DEPARTMENT RESOURCE REQUESTS. |

| **a. Equipment (per unit cost is >$500) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **a1.**  | **Physics 120/200/232****Data Acquisition systems includes Interface and Sensors $18,000****Foucault Speed of Light $5,000****Semiconductor Temp/Res $4,000****Semiconductor Band Gap $6,000****Muon Detector/Lifetime $4,500****Frack-Hertz Experiment $3,800****Photoelectric System $7,800****Interferometer Components $10,000****20 MHz Signal Generator $10,000****Digital O-Scope****DC Power supplies****DC Ammeters****DC Voltmeters****Digital Multimeter****Electronic Breadboards****Electrostatics Equipment****Cloud Chamber for Display $8,000****Gamma Spectrometer $5,800****X-Ray Diffraction Experimen $1,800** | **1****2****3****5** | **SP 2 & 6** | **Shared Equipment between Physics 120/200/121/201/232 Labs****Scheduled replacements****Existing equipment is 14 yrs old/Phys 120/200 Equipment to Modernize and improve curriculum****Modernize and improve Physics 232 Laboratory.****Replace Outdated/broken equipment** | **$80,200** | **10 year cycle****one time****10 year cycle****one-time** | **no****no****no****no** |
| **a2.**  | **Phyics 231** **Diffraction Kit (OS-8455A) $2,900****High Sensitivity Light Sensor (PS-2176) $1,200****Rotary Motion Sensor (PS-2120) $1,000****Green Diode Laser (OS-8458) $1,600** | **4** | **SP 2, 5, & 6** | **Modernize and improve Physics 231 Optics Lab.** | **$6700** | **One time (regular replacement required every 10 years)** |  |
| **a3.**  |  |  |  |  |  |  |  |
| **a4.**  |  |  |  |  |  |  |  |
| **a5.**  |  |  |  |  |  |  |  |

| **b. Technology (computers, data projectors, document readers, etc.) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **b1.**  | **Printers:****Lab rooms (NS-245, NS-249, & NS-252) $1,500 X3 = $4,500** | **1** | **SP 2 & 6** | **Instructional Services request to cycle all computers on a 5 year basis - they are 8 - 10 years old and need to be replaced now. The printers are used to print out students' lab report, etc. but they are printing very poorly.**  | **$4,500** | **on-going** | **Information Services** |
| **b2.**  | **Desktop computers:****Lab rooms (NS-245, NS-249, NS-252)****4 computers X $1700/computer** | **2** | **SP 1,2,5,& 6** | **Instructional Services request to cycle all computers on a 5 year basis** | **$6800** | **One- time** | **Information Services** |
| **b3.**  | **Desktop computers:****Lab rooms (NS-245, NS-249, NS-252)****16 computers X $1700/computer = $27800** | **3** | **SP 1,2,5,& 6** | **Instructional Services request to cycle all computers on a 5 year basis** | **27800** | **on-going** | **Information Services** |
| **b4.**  |  |  |  |  |  |  |  |
| **b5.**  |  |  |  |  |  |  |  |

| **c. Budget for 4000s (per unit cost is <$500 supplies) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **c1.**  | **Please see Department PRP** | **1** |  |  |  |  |  |
| **c2.**  | **Light Bulbs****Batteries****Mills, drill bits****Srews, nuts, glass, wood** | **2** | **SP 2 & 6** | **Regular replacement needs for phsics labs** | **$ 2,000** | **Annual** | **no** |
| **c3.**  |  |  |  |  |  |  |  |
| **c4** |  |  |  |  |  |  |  |
| **c5.**  |  |  |  |  |  |  |  |

|  **d. Budget for 5000s (printing, maintenance agreements, software license etc.) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **d1.**  | **Please see Department PRP** | **1** |  |  |  |  |  |
| **d2.**  |  |  |  |  |  |  |  |
| **d3.**  |  |  |  |  |  |  |  |
| **d4.**  |  |  |  |  |  |  |  |
| **d5.**  |  |  |  |  |  |  |  |

|  **e. Classified staff position (permanent/contract position requests unique to this discipline) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **e1.**  | **Please see Department PRP** | **1** |  |  |  |  |  |
| **e2.**  |  |  |  |  |  |  |  |
| **e3.**  |  |  |  |  |  |  |  |
| **e4.**  |  |  |  |  |  |  |  |
| **e5.**  |  |  |  |  |  |  |  |

| **f. Classified staff position (temporary and student workers position requests unique to this discipline) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **f1.**  | **Student Workers for Physcis 120, 121, 200, & 201** | **1** | **SP 2,5, & 6** | **Setup labs and activities for physics classes. Students will bring demos to local schools - communtiy out reach** | **$6400** | **on-going** | **no** |
| **f2.**  |  |  |  |  |  |  |  |
| **f3.**  |  |  |  |  |  |  |  |
| **f4.**  |  |  |  |  |  |  |  |
| **f5.**  |  |  |  |  |  |  |  |

| **III. B. Are there other resources (including data) that you need to complete your discipline review and planning?** |
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| **Remodeling of NS-255: NS-255 was modefied after NS building was finished. It was converted from office spaces to a lecture/lab room and later a storage room was added. However, the designs of the room and storage room were done without the voice of our department. For example, we asked not to put the entrance door to the classroom so that instructors could enter the storage room without disturbing the class - the entrance door was put in the classroom. We asked to put the tables with wheels so that we could arrange tables to lecture to lab - the tables do not have wheels and it is almost impossible to rearrange. We asked power outlets to be dropdown and retractable codes - power outlets are from the ground and they can be trip hazard. Ns-255 is the largest lecture/lab room for our department and we serve the largest number of students. It should be remodeled to serve those students with a better learning environment and safety.**  |

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| **STEP IV. SHARE YOUR ACCOMPLISHMENTS (AKA Brag, Toot your horn) Please include at least one discipline accomplishment that you’d like to share with the college community.** |
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| **STEP V. ACCREDITATION For programs with an external accreditation, indicate the date of the last accreditation visit and discuss recommendations and progress made on the recommendations.** |
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| **STEP VI. COMMENTS Other comments, recommendations: (Please use this space for additional comments or recommendations that don’t fit in any category above.)** |
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| **Please identify faculty and staff who participated in the development of the plan for this department:** |
| **Takashi Nakajima *Name*** | **Daniel Finkenthal*Name*** | **Art Gerwig*Name*** |

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| --- | --- | --- |
| ***Name*** | ***Name*** | ***Name*** |

**Department Chair/Designee Signature Date**

**Division Dean Signature Date**

* **Provide a hard copy to the Division Dean no later than September 14, 2012**
* **Provide a hard copy with the Dean’s sign-off to Instructional Services by September 28, 2012**
* **Email an electronic copy to** **jdecker@palomar.edu** **by September 28, 2012**