**Palomar College – Program Review and Planning**

**Instructional Programs**

**YEAR 1**

**Academic Year** **2010-11**

**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** | **09/19/2011** |
| **Instructional Discipline Reviewed (Each discipline is required to complete a Program Review)** | **Please Add Date (00/00/2011)** |

**STEP I. ANALYSIS**

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|  |  |  |  |  | **<<Prelim>>** | ◄▬ Preliminary Fall 2010 data are as of 1/30/2011 |  |
|  |  | **Fall 2007** | **Fall 2008** | **Fall 2009** | **Fall 2010** | **Definitions** | |
| **Enrollment at Census** | | 550 | 557 | 565 | 574 | *Self Explanatory* | |
| **Census Enrollment Load %** | | 76.60% | 94.88% | 95.60% | 96.30% | Enrollment at Census Divided By Sum of Caps (aka "Seats") | |
| **WSCH** | | 1,811 | 1,822 | 1,853 | 1,883 | Weekly Student Contact Hours | |
| **FTES** | | 60.37 | 60.74 | 61.77 | 62.75 | One Full-Time Equivalent Student = 30 WSCH | |
| **Total FTEF** | | 5.20 | 4.07 | 4.07 | 4.07 | Total Full-Time Equivalent Faculty | |
| **WSCH/FTEF** | | 348 | 448 | 456 | 463 | WSCH Generated per Full-Time Equivalent Faculty Member | |
| **Full-time FTEF** | | 2.40 | 2.20 | 2.20 | 2.20 | FTEF from Contract Faculty | |
| **Hourly FTEF** | | 1.87 | 1.40 | 1.40 | 1.40 | FTEF from Hourly Faculty | |
| **Overload FTEF** | | 0.93 | 0.47 | 0.47 | 0.47 | FTEF from Contract Faculty Overload | |
| **Part-Time FTEF** | | 2.80 | 1.87 | 1.87 | 1.87 | Hourly FTEF + Overload FTEF | |
| **Part-Time/(Total FTEF) %** | | 53.85% | 45.90% | 45.90% | 45.90% | 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** | | 93.36% | 90.46% | 92.14% | 95.68% | Non-W Eligible Grades (see next line) Divided by All Eligible Grades | |
| **● Success Rate** | | 64.45% | 57.25% | 60.71% | 69.78% | 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 2010-11) | |
| **Certificates Awarded:** | | - | - | - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2010-11) | |
| **- Under 18 Units** | | - | - | - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2010-11) | |
| **- 18 or More Units** | | - | - | - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2010-11) | |

| **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 but dramatic increase by almost 22 % 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 a Course or Program SLO assessment conducted by your discipline. (For examples, see** <http://www.palomar.edu/irp/11PRYear1/PRPsloExamples.pdf>) |
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| **N/A** |

| **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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| **N/A** |

| **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.)** |
| --- |
| **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 leader 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.** |

| **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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| **At this point, our Part time/Full time ratio is low. However, we anticipate the ratio will increase as our department increase the number of class offerings.** |

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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 >$500) *Enter requests on lines below.*** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Resource** | **Describe Resource Requested** | **Prioritize these requests**  **1,2,3, etc.** | **Strategic Plan 2013 Goal/**  **Objective Addressed by This Resource**  **(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **a1.** | **Physics 120/200 level**  **• Labquest Data Acq**  **• Logger Pro Software**  **• Graphical Analysis Software**  **• Sensors**  **• 2.2m Track & Acc**  **• 1.2m Track & Acc**  **• Bumper/Launcher**  **• Dynamics Carts& acc**  **• Wave Driver**  **• Centrip Force App**  **• Motion Detector Clamp**  **• Friction Board/block**  **• Projectile Ramp/Photogate**  **• Resonance Tubes**  **• Charge Sensor**  **• Current Probe**  **• Pressure Sensor**  **• Inst. Amp**  **• Mag Field Sensor**  **• Light Sensor**  **• Power Amplifier**  **• Laser Source - Green**  **• Light Meter for DMM**  **• Optical Fiber**  **• Interferometer Components**  **• Foucault Speed of Light**  **• Semiconductor Temp/Res**  **• Semiconductor Band Gap**  **• Muon Detector/Lifetime**  **• Gamma Spectrometer**  **• X-Ray Diffraction Experiment**  **• Simulation Software** | **1** | **SP 2 & 6** | **Scheduled replacements** | **$ 2,303.00**  **$ 189.00**  **$ 200.00**  **$ ,384.00**  **$ ,394.00**  **$ ,794.00**  **$ 534.00**  **$ ,200.00**  **$ 2,100.00**  **$ 1,794.00**  **$ 96.00**  **$ 700.00**  **$ 980.00**  **$ 350.00**  **$ 450.00**  **$ 234.00**  **$ 498.00**  **$ 354.00**  **$ 348.00**  **$ 330.00**  **$ 1,194.00**  **$ 897.00**  **$ 534.00**  **$ 720.00**  **$ 11,200.00**  **$ 4,899.00**  **$ 4,000.00**  **$ 6,000.00**  **$ 4,500.00**  **$ 5,800.00**  **$ 18,000.00**  **$ 1,200.00** | **on-going (regular replacement required)** | **no** |
| **a2.** | **Physics Lab Bundle with the Xplorer GLX - 230 level**  **•Physics Lab Bundle with the Xplorer GLX**  **•2.2 m PAScar Expanded Dynamics System**  **•Centripetal Force Pendulum**  **•PASPORT Rotary Motion Sensor**  **•Mini Rotational Accessory**  **•Freefall Adapter**  **•Photogates and Fences -- Dynamics Systems**  **•Photogate Tape Set**  **•Advanced Physics with the Xplorer GLX Lab Manual**  **•DataStudio Software (Site License)**  **•Video Point Physics Fundamentals**  **•Ballistic Cart Accessory**  **SUBTOTAL**  **GRAND TOTAL** | **2** | **SP 2 & 6** | **Scheduled replacements** | **•$21483**  **•$3003**  **• $875**  **•$1393**  **• $1113**  **• $584**  **•$973**  **• $273**  **• $534**  **• $359**  **•$325**  **•$638**  **$31553**  **$37900** | **on-going (regular replacement required)** | **no** |
| **a3.** | **Physics lab equipment - 230 level**  **• 1-L beaker**  **• 600 mL Beaker**  **• 250 mL beaker**  **• 100 mL beaker**  **• DC Ammeters**  **• DC Voltmeters**  **• multimeters**  **• galvanometer**  **• Current balance**  **• metric fine weight set**  **• e/m tube**  **• DC source - 35 V**  **• DC source - 12 V & 6 V**  **SUBTOTAL**  **GRAND TOTALl** | **3** | **SP 2 & 6** | **Scheduled replacements** | **$220**  **$1200**  **$540**  **$575**  **$2620**  **$216**  **$9000**  **$2097**  **$2097**  **$15570**    **$18680** | **on-going (regular replacement required)** | **no** |
| **a4.** | **Physics Lab Bundle with the Xplorer GLX - PHYSICS 100 LEVEL**  **•Physics Lab Bundle with the Xplorer GLX**    **•2.2 m PAScar Expanded Dynamics System**  **•Centripetal Force Pendulum**  **•PASPORT Rotary Motion Sensor**  **•Mini Rotational Accessory**  **•Freefall Adapter**  **•Photogates and Fences -- Dynamics Systems**    **•Photogate Tape Set**  **•Advanced Physics with the Xplorer GLX Lab Manual**    **•DataStudio Software (Site License)**    **•Ballistic Cart Accessory**  **• 1-L beaker**  **• 600 mL Beaker**  **• 250 mL beaker**  **• 100 mL beaker**  **SUBTOTAL**  **TOTAL** | **4** | **SP 2 & 6** | **Scheduled replacement** | **•$21483**  **•$3003**  **• $875**  **•$1393**  **• $1113**  **• $584**  **•$973**  **• $273**  **• $534**  **• $359**  **•$638**    **$220**  **$31448**  **$37740** | **on-going (regular replacement required)** | **no** |
| **a5.** | **GRAND TOTAL Highspeed camera** | **5** | **SP 2 & 6** | **Modernizing equipmen** |  |  |  |

| **b. Technology (computers, data projectors, document readers, etc.) *Enter requests on lines below.*** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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.** | **Desktop computers:**  **Lab rooms (NS-245, NS-249, NS-252)** | **1** | **SP 2 & 6** | **Instructional Services request to cycle all computers on a 5 year basis** | **16 computers X $1700/computer = $27800** | **on-going** | **Information Services** |
| **b2.** | **Desktop computers:**  **Faculty/Staff offices** | **2** | **SP 1,2,5,& 6** | **Instructional Services request to cycle all computers on a 5 year basis** | **4 computers X $1700/computer =$6800** | **on-going** | **Information Services** |
| **b3.** | **Printers:**  **Lab rooms (NS-245, NS-252, NS-255)** | **3** | **SP 2 & 6** | **Instructional Services request to cycle all computers on a 5 year basis** |  | **on-going** | **nformation Services** |
| **b4.** |  |  |  |  |  |  |  |
| **b5.** |  |  |  |  |  |  |  |

| **c. Budget for 4000s (per unit cost is <$500 supplies) *Enter requests on lines below.*** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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.** | **Budget increase to purchase new and updated demo equipment to replace old and some disfuntional equipment.** | **1** | | **SP 2 & 6** | | **Demo equipment are becoming old and some are not functional. Our current budget is very low compared to other departments' budgets considering WSCH. We ask for a fair share.** | | **Additional $5000** | | **on-goin** | | **no** | |
| **c2.** |  |  | |  | |  | |  | |  | |  | |
| **c3.** |  |  | |  | |  | |  | |  | |  | |
| **c4** |  |  | |  | |  | |  | |  | |  | |
| **c5.** |  |  | |  | |  | |  | |  | |  | |

| **d. Budget for 5000s (printing, maintenance agreements, software license etc.) *Enter requests on lines below.*** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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.** | **Budget increase for printing costs** | **1** | | **SP 2 & 6** | | **Each year we are deficit for incurred printing costs. This printing is used to conduct normal classroom quizzes, exams and activities** | | **Additonal $1500** | | **on-going** | | **no** | |
| **d2.** |  |  | |  | |  | |  | |  | |  | |
| **d3.** |  |  | |  | |  | |  | |  | |  | |
| **d4.** |  |  | |  | |  | |  | |  | |  | |
| **d5.** |  |  | |  | |  | |  | |  | |  | |

| **e. Classified staff position (permanent/contract position requests unique to this discipline) *Enter requests on lines below.*** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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.** | **Instructional Support Assistant III** | **1** | | **SP 2,5, & 6** | | **Currently we have a 50% share of this position with EarthSciences. We need a full time assistant to help labs, to develop labs, to maintain equipment, and to help our very active engineering students' projects.** | |  | | **on-going** | | **no** | |
| **e2.** |  |  | |  | |  | |  | |  | |  | |
| **e3.** |  |  | |  | |  | |  | |  | |  | |
| **e4.** |  |  | |  | |  | |  | |  | |  | |
| **e5.** |  |  | |  | |  | |  | |  | |  | |

| **f. Classified staff position (temporary and student workers position requests unique to this discipline) *Enter requests on lines below.*** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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** | **1** | | **SP 2,5, & 6** | | **Setup labs and activities for physics classes. Students will bring demos to local schools - communtiy out reach** | | **$6400/year** | | **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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| **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.** |
| **In Fall 2010, we got a fund for Supplimental Instruction for Physics 230 and in Spring 2011 for both 230 and 231 via CSU San Marcos Bridges Program. We are lucky to have a great SI leader who is willing to help students on weekends. Consequently, the success rate of 230 series is increasing.** |

| **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*** | **Art Gerwig *Name*** | ***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 March 11**
* **Provide a hard copy with the Dean’s sign-off to Instructional Services by March 18**
* **Email an electronic copy to** [**jdecker@palomar.edu**](mailto:jdecker@palomar.edu) **by March 18**