**YEAR 2**

**ACADEMIC YEAR 2013-14**

Program Review and Planning Year 2 form is an evaluation of the progress on last year’s goals (Year 1 PRP) and is also planning of goals and activities for the current year (2013-2014).

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| **Discipline: Engineering** | **Date 01/11/2014** |
| **Instructional Discipline Reviewed (Each discipline is required to complete a Program Review.)** | **Add Date (00/00/2014)** |

**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.).

**DEFINITION**

Program Review and Planning is the means by which faculty, staff, and/or administrators complete a self-evaluation of an academic discipline, program, or service.  The self-evaluation includes an analysis of both quantitative and qualitative data on how the academic discipline, program, or service is supporting the mission and strategic planning of Palomar College in meeting the educational and career interests of students.  Through the review of and reflection on key program elements, such as program data and student learning outcomes, Program Review and Planning defines the curriculum changes, staffing levels, activities, and/or strategies necessary to continue to improve the academic discipline, program, or service in support of student success.  The Program Review and Planning process also ensures short-term and long-term planning and identification of the resources necessary to implement identified goals and priorities.

[**Palomar College Mission**](http://www.palomar.edu/about/goals.aspx)

Our mission is to provide an engaging teaching and learning environment for students of diverse origins, experiences, needs, abilities, and goals. As a comprehensive community college, we support and encourage students who are pursuing transfer-readiness, general education, basic skills, career and technical training, aesthetic and cultural enrichment, and lifelong education. We are committed to helping our students achieve the learning outcomes necessary to contribute as individuals and global citizens living responsibly, effectively, and creatively in an interdependent and ever-changing world.

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| **Program/Discipline Mission** |
| **List everyone who participated in completing this Year 2 Program Review and Planning Document.**  **Takashi Nakajima**  **Art Gerwig** |
| **State your program’s or discipline’s mission statement. If you don’t have one, create one.**  **The mission of Physics Program is to prepare students for transfer in various Physics, Engineering, and related fields of study at four-year-universities by educating them in fundamental concepts, knowledge, critical thinking and hands-on skills using industry standard equipment and laboratory techniques and skills of physics.** |
| **Explain how your program’s or discipline’s mission is aligned with the Palomar College Mission Statement.**  **The Physics & Engineering Department’s mission is aligned with the Palomar College Mission Statement through our commitment to providing students of diversity with a comprehensive program of basic skills, as well as advanced critical thinking skills necessary to foster their success as individuals striving to complete general education, and transfer readiness. Our focus is on the development of skills and self-concept needed for the individual to be successful in the global arena and in life-long learning** |

**STEP I. Review and Evaluation of Year 1  
In this section, evaluate the program plans you described in last year’s Program Review and Planning Document.   
Refer to “STEP II: PLANNING” in your 2012-13 YEAR 1 PRP document at:** <http://www.palomar.edu/irp/PRPCollection.htm>.

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| 1. **Progress on Current Plans. For each planning area below, summarize your program plans as documented in the Year 1 form (last year’s form) and evaluate your progress on completing them.**   **Curriculum (Step II.A. of Year 1 PRP)**   1. **Summarize the plans you made regarding curriculum? (Consider how SLO assessment results influenced curriculum planning.)**      1. **How did you implement and evaluate those curriculum changes?**     **Class Scheduling (Step II.B. of Year 1 PRP)**   1. **Summarize the plans you made regarding class scheduling?**      1. **How did you implement and evaluate those class scheduling changes?**     **Faculty Hiring (Step II.C. of Year 1 PRP)**   1. **What faculty needs did you articulate for this discipline?**      1. **What is the current status of the plan you articulated?** |
| 1. **Analysis and Impact of Resources Received (Step III – Year 1 – Resource Requests for Discipline)** 2. **What is the dollar amount you received from IPC last year (2012-2013)? You can access the 2012-13 IPC PRP allocations by clicking on this link:** <http://www.palomar.edu/irp/201213resourceallocations.pdf>   **$0.00**   1. **How were those funds spent?**   **N/A**   1. **Identify permanent employees requested and prioritized by IPC, i.e., classified/CAST/administrative. You can access this information by clicking on this link:** <http://www.palomar.edu/irp/staffingplan.pdf>      1. **Describe the impact of these funds received from IPC on:** 2. **Curriculum (courses, SLOs)**      1. **Number of students affected**      1. **Other**      1. **Describe unmet funding requests as they apply to your planning and priorities.**   **The department is in desperate need of tools, equipment and supplies. Grant funds were used to purchase a lathe that can now be used along with the existing mill. Materials are needed in order to put this equipment to use. As it is now, the lab assistant that is currently shared between Earth Science/ Physics & Engineering is mostly unutilized by our department since we don't have the funding to purchase required materials. Any money made available to the department usually needs to be used to replace existing broken equipment or replace outdated equipment.** |

**STEP II. Evaluation of Program & SLOAC Data**

**In this section, review and analyze updated program data, the results of SLOACs, and other factors that could influence your program plans for this upcoming year.**

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| 1. **Program Data. Provide an analysis of the past six years (2007-08 through 2012-13) of your discipline’s data. Consider trends in the data and what may be causing them. (For enrollment, WSCH, & FTEF data, use Fall term data only). The links below will take you to the three sets of data to analyze.**     * Enrollment, Enrollment Load, WSCH, and FTEF (<http://www.palomar.edu/irp/PRP_WSCH_FTEF_Load.xlsx>) **(Use Fall term data only).**    * Course Success and Retention rates (<http://www.palomar.edu/irp/PRP_Success_Retention.xlsx>**). Note, this file is very large and there will be a delay both when you open the file and again when you initiate the first search.**    * Degrees and Certificates (<http://www.palomar.edu/irp/PRP_Degrees_Certs.xlsx>).   **Describe your analysis and observations.**  **The data shows that enrollment in the Engineering Program has doubled in the past five years. At the same time, WSCH has more than doubled. Census Load is over 100% compared to 50% five years ago.**  **Does this data reflect your planning, goals, and activities? If not, why?**  **The data shows that the department is moving in the right direction. A lot of effort has been put into giving students opportunities to participate in hands-on projects. The department also organizes get-togethers where students can congregate and interact in a relaxed environment. This has proven to build exceptional learning communities and has increased student success. These events also strengthen the rapport between faculty and students. These events are also frequented by former students that are now attending several universities, thereby providing current students with clear educational pathways and motivation for success.** |
| 1. **SLOACs. Using the comprehensive SLOAC reports and faculty discussions as a guide, provide a summary and analysis of Student Learning Outcome assessments at the course and program level. Link to SLOAC resources:** <http://www2.palomar.edu/pages/sloresources/programreview/> 2. **Summarize your SLOAC activities during the 2012-2013 academic year.**   **The current cycle is in progress.**   1. **Course SLOACs: What did you learn from your course SLO assessments? What will you maintain and/or change because of the assessment results?**   **Assessment was not due for Engr126. After the previous assessment of the SLO's, it was determined that students would benefit from additional hands-on experiences. In order to facilitate this hands-on experiences, we already purchased Arduino platforms for Engr126 and Engr 210. After using the Arduinos in Engr126 in the Fall 2013 semester, understanding and comprehension by students was greatly enhanced. These platforms will need to be expanded with support hardware in order for the students to gain experience with the latest technologies and prepare them for that they will encounter in their future education and careers.**   1. **Program SLOACs: What did you learn from your program SLO assessments? What will you maintain and/or change because of the assessment results?**   **In progress.** |
| 1. **Other Relevant Data and Information.** 2. **Describe other data and/or information that you have considered as part of the assessment of your program. (Examples of other data and factors include, but are not limited to: external accreditation requirements, State and Federal legislation, four-year institution directions, technology, equipment, budget, professional development opportunities).**   **The course requirement for Physics and Engineering both in lower as well as upper division is very challenging. The necessary critical thinking skills that need to be developed in order to solve problems can only be accomplished by repeated exposure to modern equipment and technology equal to those used in industry.**   1. **Given this information, how are your current and future students impacted by your program and planning activities? Note: Analysis of data is based on both quantitative (e.g., numbers, rates, estimates, results from classroom surveys) and qualitative (e.g., advisory group minutes, observations, changes in legislation, focus groups, expert opinion) information.**   **In order to meet the demands of industry which is currently still facing a shortage of quality physicists and engineers, more students need to graduate within these disciplines. Curriculum and course offerings need to keep up with the industry requirements. This includes instruction using the tools and techniques used in industry. Ideally, this exposure starts at the high school level or even earlier, which clearly justifies the request for an Engineering Program Coordinator in order to build these pathways from early education through graduation.** |
| 1. **Labor Market Data. For Career/Technical disciplines only, provide a summary of the current labor market outlook. This data can be found on the CA Employment Development website at** [**http://www.labormarketinfo.edd.ca.gov/**](http://www.labormarketinfo.edd.ca.gov/) **. Go here and search on Labor Market Information for Educators and Trainers (http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=112). Click on summary data profile on right side of page to search by occupation. (Check other reliable industry or government sources on Labor Market Data websites that support findings and are relevant to Region Ten – San Diego/Imperial Counties. Include job projections and trends that may influence major curriculum revisions.)** |
| 1. **Discipline/Program Assessment:** **Based on Steps I and II above, describe your discipline’s or program’s:** 2. **Strengths**      1. **Weaknesses**      1. **Opportunities**      1. **Challenges** |

**STEP III. Updated Goals & Plans**

**Taking the analyses you completed in Steps I and II, describe your program’s goals and plans.**

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| 1. **Goals and Plans: What are your goals for 2013-14? When establishing goals, consider changes you are making to curriculum, schedule, and staffing as a result of the assessments you completed in STEPS I and II above. Goals should reflect your program/discipline’s top priorities for the coming academic year.**   **For EACH goal provide the following:** | |
| **GOAL #1** | |
| **Program or discipline goal** | **New building for Physics & Engineering** |
| **Plans/Strategies for implementation** | **Major effort will need to be put into grant writing.** |
| **Outcome(s) expected (qualitative/quantitative)** | **State of the art facilities.** |
| **GOAL #2** | |
| **Program or discipline goal** | **Create Engineering Coordinator Position** |
| **Plans/Strategies for implementation** | **We will try to get the dean's support to create the position.** |
| **Outcome(s) expected (qualitative/quantitative)** | **Engineering Coordinator oversees the program, outreach community, 4 year university for smooth student transfers, and local high schools to promote.** |
| **GOAL #3** | |
| **Program or discipline goal** | **Update and modernize the lab equipment.** |
| **Plans/Strategies for implementation** | **Most of the funds will likely have to come from a grant, so a new grant will be essential.** |
| **Outcome(s) expected (qualitative/quantitative)** | **Funding for this would have the greatest impact if it were combined with funding for goal #1. Currently, the equipment and rooms for the engineering discipline is spread out over various locations. A central location where students can do their courses, labs and projects together will have a great impact and benefit. This setup is already standard at most schools with an Engineering Program.** |
| **ADDITIONAL GOAL (*if needed*)** | |
| **Program or discipline goal** |  |
| **Plans/Strategies for implementation** |  |
| **Outcome(s) expected (qualitative/quantitative)** |  |

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| 1. **Alignment with College Mission and Strategic Plan Goals.** 2. **How do your goals align with the Palomar College Mission?**   **Our goals align with Palomar College's mission, which is to provide an engaging teaching and learning environment for students of diverse origins, experiences, needs, abilities, and goals. As a comprehensive department, we support and encourage students who are pursuing transfer-readiness, general education, basic skills, career and technical training, aesthetic and cultural enrichment, and lifelong education. We are committed to helping our students achieve the learning outcomes necessary to contribute as individuals and global citizens living responsibly, effectively, and creatively in an interdependent and ever-changing world.**   1. **How do your goals align with the College’s Strategic Plan Goals? See the College’s Strategic Plan 2016 Goals at:** <http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf>   **Our goal #1 and #3 align with Palomar College's Goal #4 and 1. "Facilities and Infrastructure: Ensure that existing and future facilities and infrastructure support student learning, programs, and services."**  **Our goal #2 also aligns with Palomar College's Goal #1, "Student Connections, Pathways, Learning, and Success: Integrate and implement effective pathways, academic programs, and support services to improve student access, progress, learning, and achievement of goals".**   1. **Based on your program review and planning, describe any issues/concerns that have emerged that require interdisciplinary or College-wide dialogue and/or planning.**   **Currently no concerns that require interdisciplinary dialog.** |

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| **STEP IV. Resources Requested for Academic Year 2013-2014:** |
| **Now that you have completed Steps I – III, Step IV requires you to identify all additional resources you will need to achieve your Goals and Plans/ Strategies (Step III).  First, identify all resource needs in each budget category.  You may have up to five (5) requests per budget category.  Provide a meaningful rationale for each request and how it links to your Goals, Plans, and Strategies.   \*Second, ALL your resource requests must be prioritized as one group; not prioritized within each budget category.  This means, you could have your #1 priority in Technology, your #2 priority in Short-term Hourly, and your #3 priority in Equipment, etc.  If you actually have five (5) requests in each of the five (5) budget categories, you would end up with 25 prioritized requests. IPC will not consider any requests that are not prioritized. Resource requests to simply replace budget cuts from previous years will not be considered.   PLEASE NOTE THAT ALL FUNDING ALLOCATED BY IPC IS ONE-TIME AND MUST BE SPENT WITHIN THE DEFINED TIMELINE. RESOURCE REQUESTS THAT SUPPORT MORE THAN ONE DISCIPLINE SHOULD BE INCLUDED ON THE ‘ACADEMIC DEPARTMENT RESOURCE REQUESTS” PRP FORM ONLY.** |

**Budget category a. Equipment (600010) (per unit cost is >$500). *Enter requests on lines below. Click here for examples of equipment:*** [***http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf***](http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf)

| **Resource Category** | **Describe**  **Resource**  **Requested** | **Discipline goal addressed by this resource** | [**Strategic Plan 2016 Goal Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf) | **\* Priority Number for all Resource Request categories** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the College’s Strategic Plan.**  **(If this resource is already funded in part or full, name the source and describe why the source is not sufficient for future funding.** | **Amount of Funding Requested (include tax, shipping, etc.)** |
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| **a1.** | **3D printer** |  | **Goal #1** | **3** | **3d printers have become affordableand are used extensively in industry.** | **$5,500** |
| **a2.** | **Robotics components (Structural hardware components,electrical components, servos, gears, wheels)** |  | **Goal #1** | **1** | **The students need to have a platform to program our existing Arduino prototyping platform.** | **$14,750** |
| **a3.** |  |  |  |  |  |  |
| **a4.** |  |  |  |  |  |  |
| **a5.** |  |  |  |  |  |  |

| **Budget category b. Technology (600010) (computers, data projectors, document readers, etc.). Enter requests on lines below. *Click here for examples of technology:*** [***http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf***](http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf) | | | | | | |
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| **Resource Category** | **Describe**  **Resource**  **Requested** | **Discipline goal addressed by this resource** | [**Strategic Plan 2016 Goal Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf) | **\* Priority Number for all Resource Request categories** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the College’s Strategic Plan.**  **(If this resource is already funded in part or full, name the source and describe why the source is not sufficient for future funding.** | **Amount of Funding Requested (include tax, shipping, etc.)** |
| **b1.** | **Printer in Q-10** |  | **Goal #1** | **5** | **We do not hve a printer in this classroom.** | **$1,500** |
| **b2.** |  |  |  |  |  |  |
| **b3.** |  |  |  |  |  |  |
| **b4.** |  |  |  |  |  |  |
| **b5.** |  |  |  |  |  |  |

| **Budget Category c. Funds for Supplies (400010) (per unit cost is <$500 supplies) *Enter requests on lines below. Click here for examples of Supplies:***  [***http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf***](%20http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf) | | | | | | | | |
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| **Resource Category** | **Describe**  **Resource**  **Requested** | **Discipline goal addressed by this resource** | [**Strategic Plan 2016 Goal Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf) | **\* Priority Number for all Resource Request categories** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the College’s Strategic Plan.**  **(If this resource is already funded in part or full, name the source and describe why the source is not sufficient for future funding.** | **Amount of Funding Requested (include tax, shipping, etc.)** |
| **c1.** | **Budget increase to purchase new and updated suppliest to replace old and some disfuntional parts such as resistors, LED's, transistors, voltage regulators, wires, etc Those are perishables..** |  | **Goal #1** | **4** | **Part are used to build circuits in various classes and they have not been re-stocked. $250/year budget is too low to support this neccessity.** | **Additional $3,000** |
| **c2.** |  |  |  |  |  |  |
| **c3.** |  |  |  |  |  |  |
| **c4.** |  |  |  |  |  |  |
| **c5.** |  |  |  |  |  |  |

| **Budget Category d. Funds for Operating Expenses (500010) (printing, travel, maintenance agreements, software license, etc.). *Enter requests on lines below. Click here for examples of Operating Expenses:*** [***http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf***](http://www.palomar.edu/irp/2013CategoriesforPRPResourceRequests.pdf) | | | | | | | | |
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| **Resource Category** | **Describe**  **Resource**  **Requested** | **Discipline goal addressed by this resource** | [**Strategic Plan 2016 Goal Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf) | **\* Priority Number for all Resource Request categories** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the College’s Strategic Plan.**  **(If this resource is already funded in part or full, name the source and describe why the source is not sufficient for future funding.** | **Amount of Funding Requested (include tax, shipping, etc.)** |
| **d1.** | **Budget increase for printing costs** |  | **Goal #1** | **6** | **The printing budget has not increased since I moved to this department 20 years ago, but copying cost keeps increasing. Each year we are deficit for incurred printing costs. This printing is used to conduct normal classroom quizzes, exams and activities** | **Additional $500** |
| **d2.** | **Budget increase for mailing costs** |  | **Goal #1** | **7** | **The mailing budget has not increased since I moved to this department 20 years ago. The postage was 29 cents in 1994 and is 49 cents now. There is no way we can mail the same amount with 1994 budget.** | **Additional $30** |
| **d3.** |  |  |  |  |  |  |
| **d4.** |  |  |  |  |  |  |
| **d5.** |  |  |  |  |  |  |

| **Budget Category e. Funds for temporary or student workers (230010/240010) Enter requests on lines below** | | | | | | | | |
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| **Resource Category** | **Describe**  **Resource**  **Requested** | **Discipline goal addressed by this resource** | [**Strategic Plan 2016 Goal Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf) | **\* Priority Number for all Resource Request categories** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the College’s Strategic Plan.**  **(If this resource is already funded in part or full, name the source and describe why the source is not sufficient for future funding.** | **Amount of Funding Requested (include benefits)** |
| **e1.** | **Student Workers (SI & ET)** |  | **Goal #1** | **2** | **SI sessions are very successful for engineering classes and success rates increased. STEM grant will expire after 2015 and we need resorce for these positions** | **$16,000/year** |
| **e2.** |  |  |  |  |  |  |
| **e3.** |  |  |  |  |  |  |
| **e4.** |  |  |  |  |  |  |
| **e5.** |  |  |  |  |  |  |

**STEP V. Classified and administrative (contract) positions requests for academic year 2014-2015**

**Classified, CAST, or Administrator positions:  Enter each position request on the lines below.  You may request up to five (5) positions and they must be prioritized to be considered by IPC.  Contract position requests may include vacancies due to retirements, resignations, lateral transfers, etc., as well as any new positions to be considered.  Please note that only these position requests will be prioritized by IPC when developing the annual Staffing Plan for Instruction.**

| **Resource Category** | **Describe**  **Resource**  **Requested** | **Discipline goal addressed by this resource** | [**Strategic Plan 2016 Goal Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf) | **Priority Number for Position Requests in Step V Only** | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the College’s Strategic Plan.**  **(If this resource is already funded in part or full, name the source and describe why the source is not sufficient for future funding.** | **Amount of Funding Requested (include benefits)** |
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| **1.** | **Engineering Program Coordinator** | **1** | **Goal #1&2** | **1** | **Engineering Program is increasing. We need a coordinator to coordinate local industries, 4-year universities, and local high schools. Currently, the full time insturctor has no time since he teaching load is more than full.** |  |
| **2.** |  |  |  |  |  |  |
| **3.** |  |  |  |  |  |  |
| **4.** |  |  |  |  |  |  |
| **5.** |  |  |  |  |  |  |

**Department Chair/Designee Signature Date**

**Division Dean Signature Date**