**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: Computer Science** | **9/14/2012** |
| **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** | | 833 | 1,068 | 1,009 | 1,228 | *Self Explanatory* | |
| **Census Enrollment Load %** | | 90.94% | 92.23% | 100.30% | 93.60% | Enrollment at Census Divided By Sum of Caps (aka "Seats") | |
| **WSCH** | | 2,219 | 2,808 | 2,684 | 3,287 | Weekly Student Contact Hours | |
| **FTES** | | 73.96 | 93.61 | 89.45 | 109.58 | One Full-Time Equivalent Student = 30 WSCH | |
| **Total FTEF** | | 5.13 | 6.53 | 5.66 | 7.13 | Total Full-Time Equivalent Faculty | |
| **WSCH/FTEF** | | 432 | 430 | 474 | 461 | WSCH Generated per Full-Time Equivalent Faculty Member | |
| **Full-time FTEF** | | 3.07 | 3.33 | 3.39 | 2.40 | FTEF from Contract Faculty | |
| **Hourly FTEF** | | 1.07 | 2.47 | 1.53 | 4.00 | FTEF from Hourly Faculty | |
| **Overload FTEF** | | 1.00 | 0.73 | 0.73 | 0.73 | FTEF from Contract Faculty Overload | |
| **Part-Time FTEF** | | 2.07 | 3.20 | 2.27 | 4.73 | Hourly FTEF + Overload FTEF | |
| **Part-Time/(Total FTEF) %** | | 40.26% | 48.98% | 40.05% | 66.39% | 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** | | 96.75% | 91.92% | 95.57% | 92.12% | Non-W Eligible Grades (see next line) Divided by All Eligible Grades | |
| **● Success Rate** | | 69.51% | 58.59% | 73.42% | 68.93% | 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** | | 88.82% | 86.74% | 85.99% | 91.60% | Non-W Eligible Grades (see next line) Divided by All Eligible Grades | |
| **● Success Rate** | | 55.92% | 53.04% | 64.97% | 73.11% | A,B,C,CR/P Grades Divided By A,B,C,CR/P,D,F,FW,NC/NP,W Grades | |
| **Degrees Awarded** | | 1 | 1 | - | N/A\* | Degree Counts Are for the Full Academic Year (thus, \*N/A for 2011-12) | |
| **Certificates Awarded:** | | 2 | 1 | 4 | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2011-12) | |
| **- Under 18 Units** | | 2 | - | 2 | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2011-12) | |
| **- 18 or More Units** | | - | 1 | 2 | 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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| **Statistics from Fall 2008 to Fall 2011:**  **▪ Increase in Enrollment at Census by 47.4%**  **▪ Increase in WSCH by 48.1%**  **▪ Increase in FTES from 73.96 in 2008 to 109.58 in 2011**  **▪ Decrease in FTEF from 3.07 to 2.40 due to retiring full time faculty members.**  **Percentage of part time instructors teaching courses is 66.39% which has risen significantly despite deep section cuts required by administration.**  **The data clearly shows that the Computer Science (CSCI) discipline within the Computer Science and Information Systems (CSIS) Department has experienced considerable enrollment growth during the past 3 years. At the same time, large numbers of sections have been cut, so that now every classroom section offered in the discipline is completely full.**  **It is expected that this strong growth in enrollment will continue. CSIS enrollment has always increased in times of economic uncertainly, as new students choose a major likely to lead to a secure future, and those who lost jobs return to school for retraining. We are again in such an economic downturn and expect CSCI enrollment to expand, if allowed, during the years ahead.**  **We are therefore concerned that we must be allowed to add more sections of CSCI to serve this future demand.** |

| **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.**  **Course Outcome: Students will be able to develop C programs containing all of the most basic elements of C**  **This outcome was assessed at the end of the CSCI 220 C Programming course, with 29 students responding. Student success for this outcome was over 90%, indicating that students feel confident in their mastery of the material.**  **I.B.2 Summarize Program SLO assessment results beginning on the next line.**  **N/A - Program Assesment is ongoing and the first cycle will be complete at the end of the Spring 2013 semester once the prgrams are in to curriculum. Will revise at that time.** |

| **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.**  **Based on examination of student feedback, instructors decided that the current method of instruction in this class seems to be effective and working. We plan to continue the approach of first presenting programming theory during lecture, using many specific, small example programs. Then require students to apply this theory to programming assignments which they must complete, so that the students learn by doing. We will continue to monitor SLO outcomes, to ensure that positive results continue to be achieved.**  **I.C.2 And, please reflect upon the Program SLO findings in Box B beginning on the next line.**  **N/A - Program Assesment is ongoing and the first cycle will be complete at the end of the Spring 2013 semester once the prgrams are in to curriculum. Will revise at that time.** |

| **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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| **While the demand for technology is ever increasing, the supply of IT talent continues to fall far short of demand. A recent survey reported that almost 20% of top U.S. IT executives identified the lack of skilled personnel as the most serious constraint to growth in their businesses. The need for well trained IT workers is enormous in San Diego County. The latest labor market information released by California’s Employment Development Department (EDD) projects that for the years 2008 – 2018, for the San Diego-Carlsbad-San Marcos Metropolitan Statistical Area, both:**  **• Computer Software Engineers, Applications**  **• Computer Software Engineers, Systems Software**  **will be amongst the top 100 fastest growing occupations, with percentage change in employment of 20.2% and 18.5% respectively. The CSIS Department has recently moved into the new MD building, and new computer labs. However, in order to be able to develop and support curricula that attracts and retains students, the CSIS Department must have the necessary, on-going financial support to maintain these new laboratories. Without this support, the CSCI program’s ability to accomplish its goals is significantly diminished. This is the most crucial issue that the department has had to deal with in the past and will remain crucial for the survival of all of its programs.** |

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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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| **Within the CSIS department, the discipline of Computer Science (CSCI) is responsible for the study and design of computer systems, algorithms, languages, hardware architectures, systems software, applications software and tools.**  **The Computer Science curriculum was recently redesigned to feature a core of foundation courses followed by a depth concentration in one of six specialist track areas, as well as additional elective courses from a list of more broadly related courses. Our goal is to present curricula that explore new areas of technology while providing a strong foundation to the classical areas of Computer Science.**  **As an example, one of our new tracks focuses on the major emerging field of Mobile Programming (there are more cell-phones than computers). While we already offer an iPhone/iPad Programming course (CSCI 275) for Apple's mobile operating system, iOS, we have recently developed a new course CSCI 280 on Android programming, for Google's mobile Android platform.**  **Looking into the future, all-pervasive technologies such as mobile communication, mobile devices, the integration of entertainment and information systems, digital security, gaming, and computer forensics will inevitably lead to increases in CSCI enrollments at Palomar, and we need to expand both our programs and our infrastructure to prepare for these students.**  **Government forecasts continue to place information technologies as one of the top two or three careers in the next ten years. Four of the top five fastest growing occupations in San Diego County are computer related, according to a recent study by Employment Data Development. The increasing interest and enrollments in Computer Science will place additional demands on the discipline. New programs and classes will need to be developed to ensure that Palomar continues to be able to provide graduates to the high-tech industries either already here or planning to come to North County.**  **Ironically, a major part of our job continues to be to train students for jobs that do not yet exist.** |

| **II. B. Class scheduling (consider enrollment trends, growth, course rotation, sequencing, Center/Site offerings, comprehensiveness, etc.)** |
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| **The number of sections offered in the CSCI discipline continues to be reduced due to the budget shortfall. However, enrollments during Spring and Fall 2012 in the classes that remain have been extremely high, many classes with significant wait lists. CSCI could clearly offer many more sections, if the budget allowed. This trend of increasing enrollments is expected to continue.**  **Computer Science courses are being taught in both online and lecture formats, with the goal of being able to offer the degree completely online for those who prefer that option. Unfortunately, due to budget cuts, the CSCI discipline has been unable to increase the scheduling of classes in high demand courses.**  **Video gaming and mobile technologies will continue to be fast growing areas, which push the envelope of both hardware and software. We will be looking for areas to expand our offering in these important areas.**  **CSCI has already organized its degree programs into 4-semester course sequences to allow students to receive degrees with a two year time frame.** |

| **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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| **With the enormous projected growth in the field of Computer Science, we feel that the demand for CSCI programs will be explosive. We project the need for one or two additional full-time faculty members within the next 2-3 years.**  **Additionally, it is likely that one full-time faculty in the CSCI discipline will be retiring within the next three or four years. It is critical to the integrity of the classes that the retiring faculty be replaced with full time faculty within an academic year of their retirements.**  **Finally, the CSCI discipline needs additional full-time faculty in accordance with the requirements of AB 1725. Our FTES contract/adjunct ratio justifies hiring additional full-time faculty. The CSIS department had previously been funded for two faculty positions which have never been filled. It is crucial to the fulfillment of the CSCI discipline goals that these positions be filled in a timely manner.** |

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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.** |  |  |  |  |  |  |  |
| **a2.** |  |  |  |  |  |  |  |
| **a3.** |  |  |  |  |  |  |  |
| **a4.** |  |  |  |  |  |  |  |
| **a5.** |  |  |  |  |  |  |  |

| **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.** | **Dell UltraSharp Widescreen Monitors (33)** | **1** | **6.1** | **Larger, wide monitors are needed in the 2 main programming labs. Programming students, need the screen "real estate" in order to view and compare multiple sections of code in multiple windows. In addition, students need multiple windows open to test program as they code the programs. This allows programming in a more "real time" testing and troubleshooting environment. It is very difficult to open one window at a time when making comparisons between multiple versions of code. The students must be able to see multiple windows at the same time.See sections 1.A, 1.D, 11A Curriculum of the CSCI discipline plan and section 6.1 of the College's Strategic Plan.** | **38,000** | **On-going** | **yes** |
| **b2.** | **Apple iPad (8)** | **2** | **6.1** | **See sections 1.A, 1.D, 11A Curriculum of the CSCI discipline plan and section 6.1 of the College's Strategic Plan.** | **8,000** | **On-going** | **yes** |
| **b3.** |  |  |  |  |  |  |  |
| **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.** |  |  | |  | |  | |  | |  | |  | |
| **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.** |  |  | |  | |  | |  | |  | |  | |
| **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.** |  |  | |  | |  | |  | |  | |  | |
| **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.** |  |  | |  | |  | |  | |  | |  | |
| **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.** |
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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:** | | |
| ***Name*** | ***Name*** | ***Name*** |

|  |  |  |
| --- | --- | --- |
| ***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**](mailto:jdecker@palomar.edu) **by September 28, 2012**