Program Review and Planning

OVERVIEW OF PROGRAM REVIEW AND PLANNING FOR INSTRUCTIONAL PROGRAMS

Program Review is about documenting the plans you have for improving student success in your program and sharing that information with the community. Through the review of and reflection on key program elements, program review and planning identifies program strengths as well as strategies necessary to improve the academic discipline, program, or service to support student success. With our new Guided Pathways plan, this review becomes even more crucial for the success of our students and college.

We are using the Strengths, Opportunities, Aspirations, Results (SOAR) strategic planning technique to help us focus on our current strengths and opportunities, create a vision of future aspirations, and consider the results of this approach.

BASIC PROGRAM INFORMATION

Academic Year
2018-2019

Are you completing a comprehensive or annual PRP?
Annual

Department Name
Computer Science and Information Systems

Discipline Name
Computer Science and Information Systems - Computer Science (CSCI)

Department Chair Name
Richard Stegman

Division Name
Mathematics, Science and Engineering

Website address for your discipline
https://www2.palomar.edu/pages/csit/

Discipline Mission statement
The mission of the Computer Science program at Palomar College is to present our students with up-to-date computer
science curricula and pedagogy, ensure they have a solid foundation in the core computer science concepts, equip them
with problem solving and decision-making skills, and provide a strong foundation for transfer into a four-year program, as well as lifelong learning in the field of computer science.

(click here for information on how to create a mission statement)

Does your discipline have at least one degree or certificate associated with it?
Yes

Are any of your programs vocational (CTE/CE)?
No

List all degrees and certificates offered within this discipline.
Computer Science AS, CA

Please list the names and positions of everyone who helped to complete this document.
Professor Richard Stegman
Professor Duy Nguyen
Professor Tony Smith

Full-time faculty (FTEF)	**Part-time faculty (FTEF)**
3	6

Classified & other staff positions that support this discipline
Department ADA 30%
Systems Analyst 30%

Additional hourly staff that support this discipline and/or department
Computer Lab Tutors (25)
Computer Lab Assistants (20)

PROGRAM INFORMATION

PROGRAM OUTCOMES

Begin this section by reviewing the Program Review reports for courses and programs in TracDat. All active course and program outcomes should be systematically assessed over a 3-year cycle.

- **Program** = Leads to a degree or certificate

- **Discipline** = A group of courses within a discipline

*Programs will be able to complete program completion and outcome questions.

How well do your program's learning outcomes communicate the scope and depth of the degree/certificate offered and align with employer and transfer expectations?
Our Computer Science program is strong and current and our program learning outcomes communicate the depth of our degree/certificate program. We place students into internships, when available, and the program provides a strong foundation for students entering the workforce. As the field of Computer Science is very competitive, we encourage our students to enter a college or university to obtain a 4-year Computer Science degree.

Describe your program's plan for assessing program learning outcomes.
There are 4 CSCI program level SLOs. We have planned to evaluate one of these program SLOs per year, beginning 2017. This year we will be assessing the "Computer programs" program learning outcome: "that students will be able to design and write computer programs that are correct, efficient, and well documented".

Summarize the major findings of your program outcomes assessments.
Exams, homework assignments, and/or computer programming assignments are used to assess the success of course SLOs and we believe that our methods for assessing course and program SLOs are effective and working well. Assessment results indicate that our courses and programs are quite effective. We find that our students who transfer to 4-year Computer Science degree programs are routinely praised by their new schools (per CSUSM Computer Science faculty and several other 4-year schools across the state).

Depending on the degree or transfer goals of our students, they have the choice of three different GE

pathways:

- [Associate Degree GE Requirements](#)
- [CSU GE Requirements](#)
- [IGETC Requirements](#)

Palomar College has identified a set of General Education/Institutional Learning Outcomes, which represent the overall set of abilities and qualities a student graduating from Palomar should possess.[Click here for a link to Palomar's GE/ILOs.](#)

PROGRAM COMPLETIONS

Student success is at the core of what we do in assisting students in achieving their goals.

The Chancellor's Office Vision for Success stresses the importance of Program Completion as a major goal for our students. In addition, transfer and career readiness are key components of Palomar College's mission statement. This year, our funding formula has also changed reflecting this emphasis, providing additional funding as a function of the number of completions.

In this section we will identify a program standard and a stretch goal (what you would like to move toward) for program completions.

The standards represent the lowest number of program completions deemed acceptable by the College. In other words, if you were to notice a drop below the set standard, you would seek further information to examine why this occurred and strategies to increase completions.

In this section we will identify a program standard and a stretch goal (what you would like to move toward) for programs.

List the number of completions for each degree/certificate for the previous year.
Data show 48 Computer Science degree/certificate completions for 2017-18. That is the highest number of completions shown from 2012-13 to present. However, these numbers do not tell the whole story as many of our Computer Science students transfer to 4-year Computer Science programs without picking up a Palomar degree/certificate.

Have your program completions Increased, decreased, or stayed the same over the last 5 years?
Increased

What factors have influenced your completion trends?
* Refined our program course offerings.
* Scheduling of classes has become more efficient as shown by load factor data. We have set up a class schedule that offers all of our core classes in day, night and distance education formats.
* Received funding to embed tutors in many of our classes.
* Work closely with adjunct faculty on developing class content shown in Course Outline of Record.
* Aligning our program with a Computer Science STEM pathway.
* We have recently transferred into a more appropriate Division for our program, MSE, and are now focusing on working with other STEM departments in the new division.
* One factor that will negatively impact our completion rate is the Computer Science program mapping that was completed for the STEM grant with CSUSM. The mapping did not allow enough coursework for completion of a Computer Science degree/certificate before transfer. Administration was notified about the

issue but a response has not yet been forthcoming.

The Chancellor's Office Vision for Success stresses the importance of reducing equity gaps through faster improvements of underrepresented groups.

ACCJC also requires that colleges establish institutional and program level standards in the area of success rates. These standards represent the lowest success rate deemed acceptable by the College. In other words, if you were to notice a drop below the rate, you would seek further information to examine why the drop occurred and strategies to address the rate.

[Click on this link to review the course success rates (A, B, C, or Credit) for your discipline.](#)

In this section we will identify a course success rate standards and a stretch goal (what you would like to move toward) for programs.

Course Success Rates by gender, age, ethnicity, special population, location, and modality (You can access the Student Equity Plan on the SSEC website https://www2.palomar.edu/pages/ssec/)

COURSE INFORMATION

COURSE SUCCESS AND RETENTION

What is your program's standard for Discipline COURSE Success Rate?
70.0%

Why did you choose this standard?
We chose the College institutional standard. However, historic CSCI Total Success Rate data shows that in the past we have not met this standard. The most recent total success rates have been flat: 59% in 2015-16, 59% in 2016-17 and 58% in 2017-18.

What is your Stretch goal for COURSE success rates?
70.0%

How did you decide upon the goal?
This is a goal above our current success rate.

COURSE OUTCOMES

How have you improved course-level assessment methods since the last PRP?
After review, we find that our course-level assessment methods are doing their job, so we will continue to apply them.

Summarize the major findings of your course outcomes assessments.
The major findings of our course student learning outcomes assessments for our five CSCI required courses are extremely encouraging:

-The overall assessment results of our CSCI 212 Machine Organization and Assembly Language course is the lowest, but at around 67%, this is felt to be an acceptable result for a challenging, very technical course. And we are fortunate that our recent full-time hire Professor Duy Nguyen is an expert in this area, and will be able to improve our results here going forward

-the best overall assessment results are for our introductory CSCI 112 Programming Fundamentals I and the advanced CSCI 210 Data Structures courses, each at around 95% in our most recent findings

-the two remaining required courses have overall assessment results of around 83% and 90%, both of which are more than acceptable

This section is intentionally blank for annual PRPs. Please click "Next" to continue.

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Program Goals

In the previous sections, you identified opportunities for improvement. Using these opportunities, develop 3-year SMART goals for your department. Goals should be Specific, Measurable, Attainable, Relevant, Time-Specific. Ensure your goals align with the mission of your department and/or the College's strategic plan.

Please list all discipline goals for this three-year planning cycle. Click here for previous PRPs and goal information.

Goals

Goal 1

Brief Description
To share in the Palomar College funding resources in an appropriate and equitable manner that provides the Computer Science program with the financial capability to continually upgrade and maintain its equipment and laboratory environments in a status which effectively meets the need to provide compatibility with the constant and rapid change that is occurring in the world of computer technology.

Is this a new or existing goal?
Existing

Goal Status
Ongoing

How will you complete this goal?
Submit Resource Request.

Outcome(s) expected (qualitative/quantitative)
Our 2015-2016 PRP and 2016-2017 PRP requested replacements of computers in MD-231 and funds were never allocated. Our 2017-2018 PRP requested replacements of computers in MD-231 did receive positive feedback from IT that the computers in MD-231 will be replaced in Summer 2020. The computers in MD-231 are more than seven years old and are out of warranty. There must be laboratory environments for implementing the Computer Science curriculum that represent state-of-the-art technology. While other departments utilize computers to supplement their curriculum, computers are the essence of the Computer Science curriculum. It is a fact that our curriculum is literally defined by the laboratory environment in which it is offered. Without this support, the department's ability to accomplish its goals is significantly diminished.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
To best serve our students and meet their preparation needs at the highest level of competence, we must provide a learning environment that effectively mirrors the current technology of the real world. In order to be able to develop and support a viable, relevant and innovative curriculum that attracts and retains students, the Computer Science discipline must have the necessary, on-going financial support to maintain state-of-the-art laboratories. Achieving this goal will will empower students to succeed in their

chosen field and will cultivate an appreciation of learning.

Expected Goal Completion Date
8/31/2020

Goal 2

Brief Description
A new Instructional Support Assistant position has long been required to work in the CSIT Department computer labs. Essential duties include support of computing resources in the labs; support of student learning in the labs.

Is this a new or existing goal?   **Goal Status**
Existing   Ongoing

How will you complete this goal?
Requesting new ISA position.

Outcome(s) expected (qualitative/quantitative)
Assist CSIT Systems Analyst in setups and configurations of CSIT computer labs.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Support students learning by supplementing the concepts taught in the classroom with extra hands on laboratory work. Achieving this goal will empower students to succeed in their chosen field and will cultivate an appreciation of learning.

Expected Goal Completion Date
12/31/2019

Goal 3

Brief Description
Hire two permanent full-time Computer Science faculty members.

Is this a new or existing goal?   **Goal Status**
Existing   Ongoing

How will you complete this goal?
Classes in Computer Science continue to be very popular. While the Computer Science program shows great success, often many students are turned away. We simply cannot find enough qualified adjuncts to teach our classes as the technical requirements for Computer Science adjuncts are quite high. It's been 20 years since we have been able to hire new CSCI faculty and we're hopeful that the Computer Science discipline will get to the top of the hiring list, especially since one of our full-time faculty recently retired.

Outcome(s) expected (qualitative/quantitative)
Strengthen current program and focus on STEM pathways.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
To best serve our students and meet their preparation needs at the highest level of competence, we must provide qualified faculty to teach our classes without turning students away due to class size limitations. Achieving this goal will empower students to succeed in their chosen field and will cultivate an

appreciation of learning.

Expected Goal Completion Date
1/18/2019

Goal 4

Brief Description
Hire STEM Computer Science Tutors. Place tutors in our two introductory level courses, CSCI 112 and CSCI 114.

Is this a new or existing goal?
Existing

Goal Status
Ongoing

How will you complete this goal?
Faculty are recommending their best students to work with faculty and students in the introductory level classes.

Outcome(s) expected (qualitative/quantitative)
Computer Science is notoriously difficult, particularly at the beginning stages, so having qualified tutors in the introductory level classes will significantly improve student success.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Embedded classroom tutors in the introductory level CSCI classes will significantly improve student success. Achieving this goal will empower students to succeed in their chosen field and will cultivate an appreciation of learning.

Expected Goal Completion Date
12/31/2019

Goal 5

Brief Description
Purchase an additional GoPro Camera with accessories including memory cards, hard drives, and tripod

Is this a new or existing goal?
New

How will you complete this goal?
Submit Resource Request.

Outcome(s) expected (qualitative/quantitative)
Strengthen current program by providing online and in-house students with recorded in-house class lectures. Giving online students access to the same lecture materials that in-house students receive will significantly improve their success. Our department has started making live recording of our lectures available to all the students through a Palomar run 3C website. Both the online and in-house students have found these recorded lectures very helpful in their learning process.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Giving the students access to recorded class lectures will significantly improve student success. Achieving this goal will empower students to succeed in their chosen field and will cultivate an

appreciation of learning.

Expected Goal Completion Date
8/30/2019

Goal 6

Brief Description
Funds to support the Women in Computer Science Club (PWICS) sponsor students activities

Is this a new or existing goal?
New

How will you complete this goal?
Submit Resource Request.

Outcome(s) expected (qualitative/quantitative)
PWICS provides a source of encouragement and support for women pursuing a career in computer science. Funding to support PWICS will significantly help encourage and promote the advancement of women in computer science.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Improve diversity in learning environments, philosophies, cultures, beliefs, and people. Achieving this goal will raise more interests and awareness in women to pursue a career in computer science and will empower the students to succeed.

Expected Goal Completion Date
8/30/2019

Goal 7

Brief Description
Purchase advertising such as posters, outreach materials, etc. for our program

Is this a new or existing goal?
New

How will you complete this goal?
Submit Resource Request.

Outcome(s) expected (qualitative/quantitative)
Strengthen the department's outreach plan to attract more students.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Achieving this goal will ensure the fiscal stability of the college and increase enrollments in computer science.

Expected Goal Completion Date
12/31/2019

Goal 8

Brief Description
Purchase robotic devices

Is this a new or existing goal?
New

How will you complete this goal?
Submit Resource Request.

Outcome(s) expected (qualitative/quantitative)
Computer science has long been focused on software implementation. The ability to interface the software with robotic devices will provide the students with hands on experience applying the concepts and significantly raise their interests in learning.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Support students learning by supplementing the concepts taught in the classroom with hands on applications of the concepts. Achieving this goal will empower students to succeed in their chosen field and will cultivate an appreciation of learning.

Expected Goal Completion Date
12/31/2019

Goal 9

Brief Description
Purchase faculty computers and tablets to replace old, out of warranty equipment.

Is this a new or existing goal?
New

How will you complete this goal?
Submit Resource Request.

Outcome(s) expected (qualitative/quantitative)
Strengthen current program by providing up-to-date computers and tablets for faculty. Current faculty equipment are old and out of warranty.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Faculty require up-to-date computers and tablets to be able to create and make available teaching materials, and to support student learning.

Expected Goal Completion Date
12/31/2019

STAFFING AND RESOURCE NEEDS

Instructions

1. Refer to [Strategic Plan](#).
2. See [Data](#).
3. See career info (In PRP)

Are you requesting additional full-time faculty?
No

Are you requesting additional Staff, CAST or AA?
Yes

In the last ten years, what is the net change in number of Staff in the department? (loss vs. gain)
No changes

REQUEST FOR ADDITIONAL STAFF, CAST, AA

Staff, CAST, AA request 1

Title of Staff position you are requesting
Instructional Support Assistant/ISA3 lab assistant position

How will this Staff position help meet district (Guided Pathways, Strategic Enrollment Management etc.), department and/or discipline goals?
This Staff position will help meet department goals for support of computing resources in the labs; support of student learning in the labs.

Is there a scarcity of qualified Part-Time Staff (for example: Specialized degree/experience, emerging/rapidly changing technology, high demand)
Scarcity of budget to hire qualified Part-Time Staff.

Are you requesting this position for accreditation, regulatory, legislative, health and safety requirements? Please explain.
N/A