

Entry #: 29 - Mathematics, Science and Engineering

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DRAFT**OVERVIEW OF PROGRAM REVIEW AND PLANNING FOR INSTRUCTIONAL PROGRAMS**

Program Review and Planning is about evaluating and assessing programs and documenting plans for improving student success rates. Through review of and reflection on key program elements, Program Review and Planning identifies program strengths and strategies necessary to improve the academic discipline, program, and/or services to support student success.

The College also uses Program Review and Planning as the conduit to request resources (human, technology, facilities and funding) to further help improve and support programs.

ALL PROGRAMS WILL COMPLETE AN ANNUAL PROGRAM REVIEW FOR 2023-2024.

BASIC PROGRAM INFORMATION**Division Name**

Mathematics, Science and Engineering

Department Name

Computer Science and Information Systems

Microsoft_List_ID**Discipline Name**

Computer Science and Information Systems - Information Technology (CSIT)

Department Chair Name

Terrie Canon

Department Chair email

tcanon@palomar.edu

Please list the names and positions of everyone who helped to complete this document.

Dr. Ronald Burgher, Professor

Terrie Canon, Professor

Website address for your disciplinehttps://www2.palomar.edu/pages/csit/programs_and_courses/**Discipline Mission statement**

The mission of the Information Technology Discipline in the Department of Computer Science and Information Systems is to offer a comprehensive transfer program and training opportunities in the field of Information Systems to the diverse Palomar College community. This mission is accomplished through courses of study that focus on the knowledge and skills required by Information System employers and transfer institutions to which our students will apply. Students of the Palomar College Information Systems program will be well-rounded professionals who are experienced in a variety of programming languages, database technologies and computer applications. These graduates will have a professional work ethic and will be adept in both academic and professional arenas.

[\(Click here for information on how to create a mission statement.\)](#)

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

Yes

Are any of your programs TOP coded as vocational (CTE/CE)?

Yes

List all degrees and certificates offered within this discipline.

CIS: Data Analytics, AS

CIS: Data Analytics, CA

Information Technology, AS

Information Technology, CA

Management Information Systems, AS

Management Information Systems, CA

BASIC PROGRAM INFORMATION: FACULTY AND STAFFING RESOURCES

In this section, you will identify how many faculty and staff support your discipline's programs. This information is considered when you request permanent staff and faculty hires. It is also useful as you evaluate your program and the human resources and talent you have to support our students.

To help you answer questions in this section, you will need the links shown in red.

Enter the number of permanent or full-time faculty support your discipline (program)?

2.0

For this past fall semester, what was your Full-time FTEF assigned to teach classes?

1.4

For this past fall semester, what was your Part-time FTEF assigned to teach classes? (Part-time FTEF = PT hourly and overload.)

2.87

List the classified and other permanent staff positions that support this discipline. If possible, include number of months and percentage workload.

Academic Department Assistant (30%)

List additional hourly staff that support this discipline and/or department. Include weekly hours.

Short Term ISA III (30%) - 22 hours a week.

COURSE INFORMATION

In this section, you will review how students perform in the courses you offer as part of your program. The Chancellor's Office Vision for Success goals focus on eliminating equity gaps and increasing timely completions. Examining, reflecting upon, and developing strategies to improve course success rates is one way to help the college meet its Vision for Success Goals and support our students in reaching theirs.

Data are provided to help you examine differences in course success rates (C or better) across student demographic categories (e.g., gender) and course type (e.g., face-to-face, online).

After you complete your review of course success data, you are asked to confirm that you have assessed each course SLO within the past three years.

[Link: Course Data](#)**COURSE SUCCESS AND RETENTION****Have your overall course success rates increased, decreased, or stayed the same over the last 5 years?**

Increased

Was this expected? Please explain.

The CSIT department and classes have always been strong. The data shows a drop from 2020 to 2022. This is exactly when the world was adjusting to Covid. We are up 8% from the previous spring and this shows we are recovering from Covid nicely.

In addition, the CSIT department is getting additional hourly staff support. The year of 2022/2023 we had a tutor with the Math Center for CSIT and the hourly staff was very busy assisting students in person and online using Zoom. It is anticipated to see larger success as now we have a short term ISA III in the CSIT labs. It is hugely helpful to have open lab with support for the students.

Have your overall course retention rates increased, decreased, or stayed the same over the last 5 years?

Increased

Was this expected? Please explain.

CSIT is very challenging and additional hourly staff support has show to be of great benefit to at risk student populations. Truly the only difference in our discipline is additional hourly staff and our retention and success rate have increased. CSIT has a 92% retention rate.

Are there differences in success or retention rates in the following groups? (choose all that apply)

Age

Ethnicity

Age: What did you find and why do you think age differences exist? What do you need to help close the gap?

The students under 19 and over 50 did best, but only slightly better.

To assist the typical college age students continued support in our labs with an ISA will help.

Ethnicity: What did you find and why do you think ethnicity differences exist? What do you need to help close the gap?

Black and Hispanic were slightly lower compared to all others.

Support services such as continued support in our labs with an ISA III will help.

Please share methods that your department is using to improve retention and success rates in your courses. If you are focusing on a specific group like online students or a demographic group please include that information in your answer.

Out reach and open lab with support of an ISA III

COURSE STUDENT LEARNING OUTCOMES (SLOs)**Excluding courses that haven't been offered in the last three years, do you confirm that all of your courses have been assessed since August 2020 (Result Summary Date)?**

No

If you answered no, please explain.

Many of our CSIT classes need assessing as they were last done in 2019/2020.

This will be completed later in the semester when we have results to assess.

Upload a copy of your SLO report from Nuventive ("Report 0. Last Result Date and Action Date for All Active Course Outcomes")

[0. Course SLO Report_ Last Result Date and Action Date for All Active Course Outcomes.xls](#)
29.5 KB

**PROGRAM INFORMATION**

In this section, you are asked to consider and evaluate your programs, including the annual number of completions, and their program learning outcomes,

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.

Link: [Program Completions](#)

Access the link above titled "Program Completions" and copy and paste five years of completion data for each of your discipline's degrees and certificates.

Degrees and Certificates Awarded (Count)

Academic Year AT APD Student Count Column Labels

Row Labels 2016-17 2017-18 2018-19 2019-20 2020-21 2021-22

AA/AS

Associate in

Arts Degree 1

Associate in

Science Degree 8 3 10 16 15 16

AA/AS Total 8 4 10 16 15 16

Certificate of Achievement 9 5 14 14 6 17

Certificate Total 9 5 14 14 6 17

Grand Total 17 9 24 30 21 33

PROGRAM LEARNING OUTCOMES

Do you confirm that all of your programs have been assessed since August 2020 (Result Summary Date)?

Yes

Upload a copy of your SLO report from Nuventive ("Report 2. Last result, action, and follow-up date for each active program outcome").



[report.zip](#)
1.7 KB



Program Review Reflection and Summary

In this section you are asked to evaluate your programs by considering their program learning outcome assessments, the annual number of completions, and any other internal or external factors that had an impact on your program.

What factors have contributed to the success of your program(s)? Describe how they have contributed.

The continued increase in the number of graduates from the CSIT program at Palomar College can be attributed to several factors. The effect of the COVID pandemic had a dramatic effect on post-secondary education all over the country. Palomar was unable to conduct on-campus classes until the Fall of 2022. The Information Technology program at Palomar was able to continue to ensure the success of our students through several efforts. We started new programs in Data Analytics and Management Information Systems that have proven to be very much "in demand" and popular with students. We aggressively marketed our programs to local high school students as well as increased efforts to partner with 4-year schools in our market. STEM careers continue to be popular with students pursuing a college degree. Several reports have indicated that of all the STEM disciplines, computer related majors are much more likely to find a job than other STEM fields.

What factors have presented challenges for your program(s)? Describe the impact of these challenges.

As reported in previous years, the effect of the COVID pandemic caused a "leveling off" of completions in our discipline but after the delay that it caused, our completions have returned to pre-pandemic numbers. The percentage increase in completions in our program was 25% during the 2018/19 academic years but fell by 30% in the 2019/20 academic year. The increase in the completion rate during the 2021/22 academic year was up over 50% (21 to 33). In addition, the staffing of our classes has been challenging. We are aggressively working to recruit part-time instructors from local businesses in the Information Technology field.

CAREER AND LABOR MARKET DATA

The Chancellor's Office Vision for Success stresses the importance of increasing the percent of exiting students who report being employed in their field of study. It is important for us to consider how **all** of our programs connect to future careers.

Go to this website <https://www.onetonline.org/> and enter your discipline in the bubble on the top right for ideas about potential occupations. Click on an example to see more detail.

The following websites are for CTE related data:

- [Centers of Excellence](#) (many other data resources besides supply and demand) Password: GetLMI
- [LaunchBoard](#)
- [LaunchBoard Resource Library](#)
- [Chancellor's Office Data Mart](#)
- [Career Coach-San Diego Workforce Partnership](#)
- [EDD Labor Market Info](#)
- [Career One Stop](#)

What kinds of careers are available for people who complete your programs (and/or transfer)? (Refer to O*net Link below) Are there any new or emerging careers? If so, how would the new or emerging careers impact your future planning?

The field of Information Technology has a "Bright Outlook" according to the O*net Online career planning service. Some of the career names are: Cloud Product Director, Data Center Product Director, Information Systems Manager, IT Manager, and IT Transition Program Manager.

There are several emerging areas in Information Technology that will have a direct impact on our programs. The demand for Data Analysts, Data Architects, Data Forensic Scientists and other professionals is expected to rise very quickly for the next several years. Artificial intelligence (AI) is expected to provide a great number of opportunities for professionals in the Information Technology field. All of these fields, and others, will require that our department invest in both new technology and professionals to help students prepare for the jobs that will be available in the future.

What are the associated knowledge, skills, abilities (KSA's) needed for the occupations listed above? (click examples in the link above to get ideas)

Among the knowledge, skills, and abilities required of professionals in the Information Technology field are: database user interface and programming, enterprise resource planning software (ERP), programming language skills, Web platform development software, virus protection software development and operation, file system software operation, communications software operation, analytical or scientific software.

How does your program help students build these KSA's?

Faculty in our programs work with local information technology professionals and firms to determine what knowledge, skills and abilities are needed by individuals entering these professions and then we develop classes, degrees and certificates that will ensure graduates of our programs are prepared to enter their chosen profession with the knowledge they need to succeed.

The following four questions are for CTE programs only. If you are not a CTE program, please go back to the BASIC INFORMATION tab and select "no" for "Are any of your programs TOP coded as vocational (CTE/CE)?"

What is the regional three-year projected occupational growth for your program(s)?

According to the Centers of Excellence's Career Education Guide, the Information & Communication Technologies sector of the San Diego and Imperial County is expected to have a 5-year projected job growth rate of 5%. Computer and Information Systems Managers can expect a starting salary of \$65 and a yearly wage of \$135 thousand. Data scientists should earn a starting salary of \$44 and a yearly wage of \$92 thousand. All technology related professionals are expected to continue to be in high demand for at least the next few years.

What is being done at the program level to assist students with job placement and workforce preparedness?

Faculty in the Information Systems discipline maintain close relationships with local professionals that may be involved in recruitment for their organizations. These relationships can provide very good methods for introducing our students to contacts they can use to get introductory positions and or internships. Members of the department are involved with professional organizations such as San Diego Dot Net Users group that often publish positions available in the region. Interest has recently been expressed in investigating starting a internship program in the CSIT department.

When was your program's last advisory meeting held? What significant information was learned from that meeting?

The program's last advisory group meeting was held at Grossmont College on Friday, April 28, 2023. The agenda included discussions about the Cybersecurity curriculum, new programs and degrees, internships and Artificial Intelligence. The discussion of Artificial Intelligence (AI) was especially important due to the speed with which this technology is being developed and incorporated into the field of Information Technology.

What are the San Diego County/Imperial County Job Openings?

Industry Title Estimated Employment 2022 Projected Employment 2024 Numeric Change Percentage Change

Computer & Information

Systems Managers 100,300 102,600 2,300 +2.3%

Computer Systems Design

and Related Service 350,100 364,000 13,900 +4.0%

Other Information Services 142,400 146,000 3,600 +2.5%

Computer Occupations 757,600 780,100 22,500 +3.0%

PROGRAM GOALS

Progress on Prior PRP Goals

In the most recent PRP cycle, you identified a set of goals. Provide an update to your most recent PRP goals.

[Click here for previous PRPs with goal information.](#)

Prior PRP Goals

Prior Year PRP Goal 1

Brief Description

Increase student access, progress, and completion, while decreasing equity gaps.

Goal Status

Ongoing

Add any comments related to your work on prior goal (e.g., success, challenges, reasons for eliminating a goal). Describe Outcomes, if any.

Prior Year PRP Goal 2

Brief Description

Offer well developed curriculum in the CIS: Data Analytics degree program.

Goal Status

Ongoing

Add any comments related to your work on prior goal (e.g., success, challenges, reasons for eliminating a goal). Describe Outcomes, if any.

Partnering with UC Berkeley and utilizing their well-developed curriculum over the last several years in our CSIT 128 Introduction to Data Science course. This is the second year the course is offered, utilizing cloud-based curriculum on a grant from UC Berkeley. This includes support staff and faculty to successfully launch and offer the curriculum.

Prior Year PRP Goal 3

Brief Description

Improve technology in our classrooms to promote learning in the diverse populations of our students.

Goal Status

Ongoing

Add any comments related to your work on prior goal (e.g., success, challenges, reasons for eliminating a goal). Describe Outcomes, if any.

Purchase new audiovisual equipment for all our on campus classrooms. In addition, purchase new computers and equipment for our CSIT computer labs

Describe any changes to your goals or three-year plan as a result of this annual update.

Do you have any new goals you would like to add?

Yes

Establishing New Goals and Strategies for the Next Three Years

Goal 1

Brief Description

Support student success by creating a permanent position of ISA III in our CSIT labs.

How will you complete this goal? Include Strategies and Timeline for Implementation.

Get approval for a permanent position. Fall 2024 is the timeline.

Outcome(s) expected (qualitative/quantitative)

Improvement in student success for our diverse student population.

How does this goal align with your department mission statement, the college Vision Plan 2035, and /or Guided Pathways?

This goal aligns as it will improve student success in the courses of study in Information Systems.

Expected Goal Completion Date

6/20/2025

Goal 2

Brief Description

Support the implementation of the newly developed Data Science degree.

How will you complete this goal? Include Strategies and Timeline for Implementation.

Offer more classes that support this degree.

Hire adjunct faculty with expertise in this field with the goal of requesting a fulltime data science faculty.

Outcome(s) expected (qualitative/quantitative)

Improved enrollment and transfer success.

How does this goal align with your department mission statement, the college Vision Plan 2035, and /or Guided Pathways?

This goal aligns as it offers a new transfer path and program in the field of Information Systems to the diverse Palomar College Community. In addition, it further enhances our guided pathways by offering student a skill based CIS: Data Analytics degree as well as a Data Science transfer path to address the diverse needs of our students.

Expected Goal Completion Date

6/20/2025

RESOURCES

Congratulations! You are nearing completion. In this section, you will consider the resources you need to implement your three-year program review plan and/or address any findings from your assessment of your discipline.

The section is organized into the following five parts:

PART 1: Staffing Needs (Faculty and Additional Staff)

PART 2: Budget Review

PART 3: Technology Needs

PART 4: Facilities Needs

PART 5: One Time Request for Other Needs (NonTechnology Equipment, Supplies, Operating Expenses, Travel)

Reflect upon the three year plan you created above, your current operations, and any upcoming factors (retirements, changes in legislation, and changes in policies or procedures) that will impact your unit. How will you allocate resources to implement your plan? Describe additional resources needed to improve the effectiveness of your unit/program. All resource requests must be aligned with the College's [Vision Plan 2035](#).

Summarize any reallocation/re-organization of resources you are making based upon your three-year plan, your current operations, and any other factors (e.g., legislation). Describe the impact of the reallocation of resources to your unit.

NOTE: All requests listed in the PRP will be reviewed by deans and supervisors, then forwarded to the appropriate review group for prioritization. A resource requests approved to move forward in the review process does NOT guarantee a position or funding.

PART 1: STAFFING NEEDS

Requests for faculty will follow the prioritization process currently in place in the Faculty Position Prioritization committee, which reports to the Education, Equity, and Student Success Council. Requests for new staff positions will be prioritized at the division level and reviewed at Exec.

Are you requesting additional full-time faculty?

No

REQUEST FOR ADDITIONAL FULL-TIME FACULTY

Faculty Request 1

Title of Full-Time Faculty position you are requesting

CSIT Professor with emphasis in CIS: Data Analytics and Data Science

How will this faculty position help meet district (Guided Pathways, Strategic Plan, Strategic Enrollment Management etc.), department and/or discipline goals? Please be sure to tie this back to your PRP goals and three year plan.

It will support the guided pathways, department and discipline goals. The prp goal is to hire adjuncts in data analytics and data science and then a fulltime faculty to support both the CIS: Data Analytics and Data Science degrees. These degree's are designed to serve a diverse body of students. The CIS: Data Analytics degree is for students with degrees and/or work experience excited to break into Data Analytics by learning software skill sets. In contrast, the newly created Data Science degree is intended for students eager to transfer in Data Science and earn a four year degree in Data Science. All the courses offered in the Data Science degree support current curriculum in Computer Science, Information Technology, Math, and the STEM sciences.

Is there a scarcity of qualified Part-Time Faculty (for example: Specialized degree/experience, emerging/rapidly changing technology, high demand)?

This is a high demand field with a huge scarcity of qualified part-time faculty.

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

no

Utilizing your PRP data, please summarize the discipline productivity, efficiency, and any regional career education needs for this discipline.

There is anticipated 5% growth in Data Science. It is considered a high demand field with not enough candidates.

Is your department affected by faculty on reassigned time? If so, please discuss.

No, but we do have faculty retirement this year and the near future.

Are you requesting AA, CAST for Classified Staff?

Yes

REQUEST FOR ADDITIONAL CLASSIFIED, CAST, AA

Staff, CAST, AA request 1

This year, units are asked to identify new positions only as part of the PRP process. Vacant positions will be addressed outside of the PRP process.

If you are requesting STAFF, please fully complete this section. If not, you can skip to the next resource section. Click "+Add Staff, CAST, AA request" below for each additional request.

When considering the funds required for a position, consult the HR website for position salary schedule and the [Benefits Worksheet](#) for additional costs related to benefits for the position.

Title of new position

ISA III

Is the position request for AA, CAST, or Classified staff?

Classified

Is this request for a full-time or part-time position?

Full Time

How does the position fill a critical need for current, future, or critical operations?(e.g. accreditation, health and safety, regulatory, legal mandates, institutional priorities, program trend analyses of growth/stability.)

This position is currently staffed by a short term employee, therefore we have current needs. The future of CSIT and utilizing our labs is critical to have this position. Would greatly prefer a fulltime position to support our many labs, curriculum and classes. It is critical to operations of the lab as we have equipment such as Raspberry Pi's and other equipment that students can check out during open lab to successfully complete assignments.

Does the position assist in establishing more efficient District operations through either of the following: reorganization/restructuring OR use of technology?

The position does assist in being more efficient as it supports the use of technology in the lab classrooms.

Is there funding that can help support the position outside of general funds?

No

Describe how this position helps implement or support your three-year PRP plan.

It supports the three year plan by assisting students in learning. Students of diverse backgrounds are in most need for improvement. Having an ISA III allows students to utilize specialized equipment in the classroom to allow the student to be successful in the classes they are taking in all formats, online, on campus, hybrid and hyflex.

Educational Vision Plan 2035 Objective

1:2	1:7	1:11	2:5
1:3	1:8	2:1	2:6
1:4	1:9	2:3	3:1

If the position is not moved forward for prioritization, how will you address this need?**PART 2: BUDGET REVIEW**

Request that your ADA provide you with your *Available Budget Report* and complete this section.

Review your recent Budget/Expenditure reports and consider your three-year PRP plan.

Do you have any ongoing needs or needs to augment your regular budget?

No

PARTS 3, 4 and 5 – TECHNOLOGY, FACILITIES AND OTHER NEEDS

1.One-Time Fund Requests. Through the PRP process the college implements an approach for prioritizing and allocating one-time needs/requests. Prioritization takes place through the appropriate groups, leadership, and the Budget Committee. The executive team and Resource Allocation Committee consider various sources for funding PRP requests. Resource requests also inform the larger planning process like Scheduled Maintenance Plans, Staffing Plans, and institutional strategic planning.

For more information about funding sources available, see [IELM BLOCK GRANT, LOTTERY, PERKINS AND STRONG WORKFORCE GUIDELINES](#) (on the left menu of the webpage).

If you are a CTE program and think you may qualify for CTE funds for your PRP request(s), you are STRONGLY encouraged to answer the call for Perkins/Strong Workforce grant applications in February. Contact the Dean of CTEE for additional information.

Consider submitting one-time requests only if you have verified that you cannot fund the request using your general discretionary funds or other funds.

1.Technology and Facilities Review. Requests for technology and facilities are assessed by the Deans and then, if appropriate forwarded to the proper institutional group (e.g., technology review committee, or facilities) for review and feedback.

PART 3: TECHNOLOGY NEEDS**Will you be requesting any technology (hardware/software) this upcoming year?**

Yes

Technology Request

Technology Request 1

What are you requesting?

New computer lab.

Is this a request to replace technology or is it a request for new technology?

Replacement of Technology

Who is the current user of the requested replacement technology?

Students

Provide a detailed description of the the request. Include in your response:**a. Description of the need? (e.g., SLO/SAO Assessment, PRP data analysis)**

We have old out of warranty computer equipment in a few labs. It would be simply amazing if we could replace one lab of equipment this coming year. This includes 32 student and one faculty computer system.

b. Who will be impacted by its implementation? (e.g., individual, groups, members of department)

students

c. What are the expected outcomes or impacts of implementation?

All computers in the lab will be operational and in warranty.

d. Timeline of implementation

next year.

What is the anticipated cost for this request? If any, list ongoing costs for the technology (licenses, support, maintenance, etc.).

70,000 dollars

Do you already have a budget for this request?

No

What PRP plan goal/objective does this request align with?

Prior Year Goal 3 - Improve technology in our classrooms to promote learning in the diverse populations of our students.

What Educational Vision Plan 2035 Goal/Objective does this request align with?**If you have multiple requests for technology and had to prioritize, what number would you give this? (1 = Highest)****What impacts will this request have on the facilities/institution (e.g., water/electrical/ADA compliance, changes to a facility)?**

Will you accept partial funding?

No

PART 4: FACILITIES REQUESTS

Do you have resource needs that require physical space or modification to physical space?

No

PART 5: OTHER ONE-TIME NEEDS

For more information about funding sources available, see [IELM BLOCK GRANT, LOTTERY, PERKINS AND STRONG WORKFORCE GUIDELINES](#). Please check with your department chair on the availability for this cycle.

Do you have one-time requests for other items (e.g., Non-technology equipment, supplies, operating expenses, travel) that your budget or other funding sources will NOT cover?

No

I confirm that all full-time faculty in this discipline have reviewed the PRP. The form is complete and ready to be submitted.

Yes

Enter your email address to receive a copy of the PRP to keep for your records.

tcanon@palomar.edu

Feedback and Review

Department Chair

I confirm that the PRP is complete.

No

Department Chair Name

Date