Faculty Request Form - Fall 2024
Department/Area and Name of Submitter

Computer Science & Information Systems: Mary Pape

Details on Faculty Positions Requested

* if requesting more than one position within the same area, please provide the area's priority ranking for each position to help inform RAPP of the priority preferences as determined by the area.

Position Name	Replacement or Growth	Retirement/Resignation Date	Instruction, Non-Instruction, Both	If Both, indicate the ratio	*Area Ranking
Faculty	Replacement	Retirement, June 30, 2024	Instruction		

Guiding Principles

De Anza College's mission and Educational Master Plan serve as guiding principles for programs to facilitate continuous development, implementation, assessment and evaluation of their program effectiveness as part of ongoing planning efforts.

De Anza identified the following areas within its Educational Master Plan:

- Outreach, Retention, Student-Centered Instruction and Services, Civic Capacity for Community and Social Change

Through its Equity Plan Re-Imagined, it identified the following framework to work towards narrowing long-standing equity gaps:

- Racial Equity: Faculty members, classified professionals and administrators should: recognize the realities of race and ethnicity for students of color. Develop intersectional understanding of the ways in which institutional racism shapes educational access, opportunity and success for Black, Filipinx, Latinx, Native American, Pacific Islander and other disproportionately affected students.
- Student Success Factors: The College should ensure students: Feel connected to the college; Have a goal and know what to do to achieve it; Actively participate in class and extracurricular activities; Stay on track – keeping their eyes on the prize; Feel somebody wants them to succeed and helps them succeed; Have opportunities to contribute on campus and feel their contributions are appreciated.

Based upon these guiding principles above, please refer back to the comprehensive program review to inform your response below (see the following areas in the comprehensive program review: Reflect on Enrollment Trends, CTE Programs - Statewide and Regional Labor Market Trends, Exploring Course Success Rate Trends, Exploring Gaps in Successful Course Completion by Ethnicity, Teaching and Learning Strategies, Trends in Awards and Staffing Needs).

A. Instructional Faculty

Faculty Position Request Data Sheet

Limits: From 2018-19 to 2025-26

Fill Rates

Business/Computer Systems - Computer Information System-FD

	2018-19	2019-20	2020-21	2021-22	2022-23
Enrollments	8,711	9,127	10,027	9,086	9,428
Sections	232	249	266	268	279
Fill Rate	96%	95%	96%	90%	96%

FOOTHILL-DE ANZA
Community College District

PRECISION CAMPUS

Success and Equity
Business/Computer Systems - Computer Information System-FD

	2018-19	2019-20	2020-21	2021-22	2022-23
Success Rate	75%	77%	77%	76%	77%
Withdraw Rate	12%	13%	14%	13%	11%
Equity Gaps	-17%	-16%	-15%	-14%	-16%

Faculty Load Ratios
Business/Computer Systems - Computer Information System-FD

	2018-19	2019-20	2020-21	2021-22	2022-23
Full Time	35%	34%	31%	32%	25%
Part Time	55%	53%	56%	56%	64%
Overload	10%	12%	13%	12%	11%
FTEF (full time only)	8.7	9.0	8.9	8.9	6.8

Awards
Business/Computer Systems - Computer Information System-FD

	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Certificates	109	107	147	86	90	90
Associate Degrees	25	22	34	32	22	37
Associate Degree for Transfer	59	88	145	119	127	144

Data is for the academic year, including summer term and early summer/second spring terms for Foothill College. Enrollments include students who are counted for apportionment for the report years (i.e., Apprenticeship, noncredit and other students who do not necessarily have a reported grade). Cross-listed courses are included in the home department. Some courses may continue to be listed but no longer have data due to renumbering or because the course was not offered in the past five years.

1. How does the department use the data listed above to develop, adapt, and improve teaching and learning to respond to the needs of changing environments, populations served, and evolving institutional and state priorities? Be sure to refer back to your Comprehensive Program Review form to inform your response.

Computer Science & Information Systems Department uses data on **fill rates and general enrollment** in combination with CTE LMI data to make decisions on number of sections to offer, to initiate new courses, new programs, updating of courses and programs, and deletion of courses where the industry demand for such courses is decreasing.

Enrollment and unduplicated headcount have increased every year since 2012-13 (first year there is data for) through the present 2023-24 year. Digging deeper into the data, enrollment in our original core courses of CIS 22A, CIS 22B, and CIS 22C was slightly decreasing in 2015-16 we began to introduce Python courses Fall of 2016. The two main Python classes CIS 41A: Python Programming and CIS 41B: Advanced Python Programming prepare students for transfer in computer science. These courses also cover topics that establish Python as the preferred programming language for data science and related technologies. Hence these courses offer students a strong foundation to pursue Data Science upon transfer.

In 2020-21 CIS 9: Introduction to Data Science course was added providing introduction to data analytics, machine learning and natural language processing.

For Fall of 2025 an exciting addition will be CIS 11 Foundation of Data Science for All with a support corequisite course and mirrored noncredit courses. These offerings are in acknowledgment that students across all disciplines will likely need skills to select relevant data, apply suitable algorithms, and present their

findings effectively in their future careers. Subsequently the CIS 9:Data Science course will be expanded and divided into two to facilitate more topics on natural language processing, artificial intelligence and machine learning. The adding of new programs and the updating of existing certificates and degrees is also scheduled. Such updates to certificates and degrees should keep the number of awards earned by students increasing.

Please see response to 1. Part C. and 2. for our use of Success and Equity Data and Awards Data.

Please see response to 4, 5, and 6 for our use of Faculty Awards Data.

B. Non Instructional Faculty

1. Describe the data used to develop, adapt, and improve teaching, learning, and/or support to enable this position to respond to the needs of changing environments, populations served, and evolving institutional and state priorities (this may include a description of the population served, student needs and experiences from surveys or focus groups, or ratios related to the number of students served relative to current occupational standards, be sure to refer back to the program review where applicable).

N/A

C. Instructional and Non Instructional Faculty Justifications

1. How does this request align with the goals in the Educational Master Plan? (refer back to the comprehensive program review areas: Mission and Program Goals).

Full-time faculty are generally closer to the pulse of the college and have the opportunity to spend more of their day involved in activities focused on the Educational Master Plan goals. These goals support all students but are particularly focused on students that are experiencing the greatest disproportionate impacts across all metrics:

- *Outreach to Historically Under presented Populations* – While CIS department works with Outreach by attending spring Enrollment Day, high school campus visits, Villages Open House, Welcome Day the number of full-time faculty is spread thin to cover all of these. In spite of the relatively small number of full-time faculty 26 mirrored non-credit courses have been developed. Since these are both free and since non-credit classes mean that students do not need to feel pressured into earning an 'A', we hope to entice students who do not see themselves as technology people to try a CIS course or two and realize they can after all see themselves in a technology focused career. We have developed five noncredit certificates and programs and one more effective Fall 2025.
- *Course success* & retention –
  - Faculty are encouraged to use zero-cost textbooks and some faculty are developing OER materials
  - LinC program (Abeer Alameer - FT) with CIS 22A beginning programming course and MATH 1A first quarter calculus in Fall quarter and CIS 22B intermediate course and MATH 1B second quarter calculus for Winter quarters.
  - Volunteer Teaching Assistant program and paid peer tutoring program
  - Faculty are involved in creating OER and ZCT resources
- Assist students in transfer – Faculty are the first line of support to encourage and advise students in transfer offering them nuances in how to be successful in transferring and beyond.
- Degree and certificate training – Continue and increase workshops to encourage students to attain certificates and degrees as they work toward goal of transferring.
- Work with Advisory Board to update requirements and offerings in the area of certificates and degrees.
- Workforce training – Develop more certificates such as the Information Technology Technical Support Certificate that lead directly to employment.

2. How does this request align with the College's Equity Plan Re-Imagined? (refer back to the comprehensive program review areas: Exploring Gaps in Successful Course Completion by Ethnicity and Teaching and Learning Strategies)

The CIS Department's over all success has climbed steadily from 75% in 2018-19 to 78% in 2023-24, but the success gap for our students from underrepresented groups remains about the same at 16%.

The measures we have in place:

- Robust volunteer teaching assistant along with paid peer tutoring program
- Providing free digital textbooks to each student in each beginning programming class
- Increasing use of access to zero cost resources across more classes.
- CIS faculty, both part-time and full-time have been availing themselves of professional development opportunities centered on equity
- While meetings on campus are still problematic, we are using discussion features of Canvas to exchange ideas on pedagogy on a regular basis and have created separate Canvas shells for groups of faculty teaching each one of the core courses.
- Make use of Connect early alert app
- Work with DSPS office

Note Bene: Please note that we would not be where we are if it were not for our part-time instructors.

There is a part-time instructor who has been spending hour upon hour with one student so that one student can succeed. And that faculty member has involved CIS tutoring, DSS Office, Connect to assist. More could not be asked of anyone, full-time or part-time instructor.

For a small stipend a part-time CIS faculty member made connections with Google and Facebook providing our students not only guests speakers and great trips to their campuses but also Google was instrumental in establishing Information Technology Technical Support COA. This certificate is aimed at the student who needs immediate employment and does not see themselves (yet) as a computer scientist.

Part-time instructors show up to assist at every Welcome Day, Spring Open House, hackathon, Computer Programming Contest.

When a course outline comes up for revision, the part-time instructor(s) who have been teaching that course give their input on the updates.

Part-time instructors remain involved in ongoing discussions in the Department's Canvas shell for faculty

Part-time faculty volunteer as faculty advisors for clubs

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It is just that part-time faculty have other pursuits meaning they give their all when they can.

3. How does the position support on-going college operations and/or student success? (refer back to the comprehensive program review areas: Exploring Course Success Rate Trends, Exploring Gaps in Successful Course Completion by Ethnicity, Teaching and Learning Strategies)

For De Anza College as a whole 49.3% of the courses for 2023-24 where taught by part-time faculty. Comparing this with 69.7% of CIS classes were taught by part-time faculty for the same year. Back in 2012-13 only 39.6% of CIS classes were taught by part-time faculty.

From 2018-19 the number of full-time instructors has decreased by TWENTY-EIGHT percent (-28%!) while the unduplicated headcount has increased by FIFTEEN PERCENT (+15%). Bringing the number of faculty back up closer to what we had in 2018-19 will increase student success and our ability to be involved in curriculum development.

In addition to striving for each student to be supported in their academics, we also need to offer our students the courses that will give them the cutting edge especially when they are choosing an emphasis

within computer science/engineering.

4. Why is the position needed and how would the position contribute to the health, growth, or vitality of the program? (refer back to the comprehensive program review area: Staffing Needs)

This new position:

CIS Department is currently authoring courses geared to new technologies of data science, AI (as requested by the Chancellor), machine learning, natural language processing. One more person will make this process go more swiftly and we are going to need full-time faculty who can teach the courses and who can lead teaching courses where there are multiple sections.

Full-time faculty are the ones that the heavy lift of developing and updating curriculum falls upon. Another person will speed this process up and means there will be more full-time faculty to work with on curriculum. This will build collegiality.

Full-time faculty are generally more versed in the pedagogy of teaching. This will assist in closing the gap in the case of students from underrepresented groups.

Expand ability to avail ourselves of grants in collaboration with University of California campuses and California State Universities. Currently we work with UC Santa Cruz in the implementation of Servingness in Computing through Excellence Scholars Transfer Pathway, trying to position ourselves for OER development funds, and are waiting to hear University of San Francisco as sub-pi on Bridges and Pathways to Data Science NSF grant.

CIS faculty are currently exploring ideas on offering a Bachelor's degree in the area of Data Science and related technologies. However, there is just only so much that seven full-time faculty with one on Article 18 and total of 0.678 release time can do.

5. Describe the current staffing and history of staffing in your area and how the current staffing affects the health, growth, or vitality of the program. (refer back to the comprehensive program review area: Staffing Needs)

All CIS faculty give extra of their time and energy by adding students to their class sections over the 40 maximum. This is especially appreciated since some of our more cutting-edge or 'boutique' classes do not necessarily draw a full 40 students per class. 96% fill rate evidences this extra effort from each faculty member. High fill rates indicate that we do manage resources well.

There are currently 37 active part-time faculty. CIS faculty have always valued part-time faculty to instruct the "cutting-edge" classes. Currently this is the case when part-time faculty teach the following courses: CIS 5 Swift Programming, CIS 3 Business Information Systems, CIS 4 Computer Literacy, CIS 44H R Programming, CIS 44F Introduction to Big Data and Analytics, CIS 46 Fundamentals of Digital Security, CIS 57 Website Administration, CIS 102 Ethical Hacking, CIS 104 Digital Forensics and Hacking Investigation, CIS 105 Cloud Security Fundamentals to list a subset.

Issue is the majority of classes in our core courses (CIS 22A, CIS 22B, CIS 22C, and CIS 21JA) should be taught by full-time faculty. For the core courses we wish for the students to be well-supported knowing that their learning is the main goal. To accomplish this, best practices need to be developed and more importantly they must be practiced by all faculty teaching these classes. Industry background partners bring wonderful accomplishments and knowledge to the department but should be supported in conveying that knowledge to beginning students. **Looking at the schedule for this Fall 2024 there are a total of 26 sections counting as "core classes" for transfer. Twenty-one of these sections or 81% are being taught by part-time instructors.**

6. Explain how the work will be accomplished if the position is not filled. (refer back to the comprehensive program review areas: Staffing Needs)

If we do not have these full-time positions, the following initiatives that are already in place will need to be relied upon more:

- Continue indefinitely with providing students in the beginning programming courses with zyBooks at no charge to the student.
- Broaden Volunteer Teaching Assistants and Paid Peer Tutoring programs.

The CIS Department will not be able to expand the course offerings into data science, cloud computing, AI, etc. as much and as quickly as we would like to.

The CIS Department will not be able to expand noncredit offerings as quickly as we would like to.

We will not be able to support all computer science student clubs.

Fewer faculty to plan events.

The department will be slower to embrace credit for prior learning, providing students with internship or research opportunities, and developing creative pathways for individual groups.

7. Other information, if any.

N/A

Dean/Manager Comments (Deans, please review the form for completeness and clarity and provide additional details as needed)

I fully support the Computer Science and Information Systems Department's request for additional full-time faculty. Hiring another full-time faculty member is essential to help our students succeed and meet evolving industry demands. With this addition, we can expand course offerings and ensure students receive mentorship and support in and outside class time. This is especially important for maintaining a curriculum that remains relevant in critical fields such as AI, cybersecurity, cloud computing, and data science.

As noted above, we rely heavily on part-time faculty, who have been incredibly accommodating. However, with the recent resignation of a full-time faculty member, it is crucial to fill this gap to support our students' timely completion of certificates and degrees. Investing in additional full-time faculty will significantly enhance our students' educational experience and better prepare them for today's workforce. Thank you for your consideration.

This form is completed and ready for acceptance.