De Anza College

Program Review – Annual Update Form – Fall 2025

1. Department/Area Name: **Computer Science & Information Systems**

2. Name of individual(s) completing the form: **Mary Pape**

3. Briefly describe how your area has used the feedback from the Comprehensive Program Review and Annual Program Review Update provided by RAPP members over the past two years (if unsure, request the feedback form from your dean/manager).

The column on the RAPP Feedback Form for 2025 labeled "Feedback for Improvement" had no entries. However, in the column labeled "Comments" there were some ideas to consider for growth. Of particular interest was the question, "Does the department have a goal potentially of increasing noncredit offerings/programs?"

Currently the CIS department has a little over 90 courses for credit. Twenty-nine of these are mirrored with a noncredit course offering. There are another seven courses all with the focus on AI becoming effective Fall 2026. The question from RAPP verifies that it was probably a good idea to mirror four of these seven new AI courses with a noncredit course. Students, concerned with their budgets and their GPA, are often hesitant at first to enroll in new courses and programs. Taking the noncredit version satisfies both concerns.

4. Describe any changes or updates that have occurred since you last submitted program review (program review submissions).

One full-time faculty member retired: Manish Goel is sorely missed. Our most ambitious computer science students appreciated his way of challenging them to greater success. His legacy is our students' interest in competing in the International Collegiate Programming Contest which we were able to host again this year in spite of Manish's retirement.

Cybersecurity: There is a greater demand for cybersecurity courses. The department accommodated this growth in student interest with the hire of a new part-time faculty member, adding more sections of cybersecurity for 2025-26, applying for the NSA Cybersecurity CAE designation https://www.caecommunity.org/cae-cd-progam-checklist, applying for Bachelor's degree in Bachelor of Science in Applied Cybersecurity and Network Operations, and implementing IBM CyberCampus. CyberCampus is provided in partnership with Cloud Range Cyber. The four cybersecurity instructors are being trained on the CyberRange virtual environment and are also reviewing the separate yet complementary lab activities that help students build the skills needed for CyberRange scenario work.

Artificial Intelligence: CIS Department has embraced this new phenomenon seeing it as the department's ride into the future. We have developed seven credit AI courses, four noncredit AI courses, and four awards (Certificate of Completion, Certificate of Achievement, Certificate of Achievement – Advanced, and Associate of Arts Degree) which all become effective Fall 2026. Introduction to AI and Introduction to Prompt Engineering will be offered Fall 2026 with the other 5 courses added to the schedules for Winter and Spring 2027. Perhaps more importantly the Department surveyed the department's faculty teaching programming courses on the effects of AI on their pedagogy.

5. Provide a summary of the progress you have made on the goals (i.e., OKRs for Student Services) identified in your last program review (as included in the comprehensive program review or annual program review update).

Goal title	Goal description	Responsible parties	Collaboration with….	What evidence have you used to monitor progress?	How have you assessed your goal?	What changes have been made based on the assessment?
Evolve with change through creation of courses and programs to empower our students reach their potential.	New course paralleling UC Berkeley Data 8 - Data Science for All	Clare Nguyen and entire CIS department	Mathematics Department with Fatemeh Yarahmadi as contact person	Articulation with UC Berkeley Data 8	Goal achieved	None – See narrative Goal 1 below.
Increase enrollment from underrepresented groups while closing the gap	Starting programs that draw students from underrepresented groups.	All CIS faculty and Division staff	Programs across campus	Encourage Village events and activities	Enrollment numbers and success percentages show seven % decrease in gap.	See Goal 2 Below

> **Goal 1:** *Evolve with change through creation of courses and programs to empower our students reach their potential.* CIS 11 Foundation of Data Science for All has received

articulation with UC Berkeley's Data 8! The first offering of CIS 11/311(noncredit) and its support course CIS 111X/311X(noncredit) was Fall 2025. The noncredit assisted in enrollment numbers for the first offering of this course as its articulation was not yet verified. Now that assist.org is showing the articulation with UC Berkeley, the class is full and overflowing for Winter 2026. CIS Department has achieved this goal.

GOAL 2: *Increase enrollment from underrepresented groups while closing the gap:* CIS Department's gap has closed seven percentage points from 2023-24 (Success overall 78%, success for Black, Latinx, and Filipinx Students 63%) to 2024-25 (Success overall 80%, success for Black, Latinx, and Filipinx Students 72%). While the headcount enrollment for our underrepresented groups did not increase, their success rates did: Black from 56% in 2023-24 to success of 62% in 2024-25; Filipinx from 73% in 2023-24 to success of 79% in 2024-25; and Latinx from 62% in 2023-24 to success of 72% in 2024-25.

Each time we respond to a change or initiate a new focus, equity is the first consideration. There are two changes in our tutoring/TA program to positively affect both the enrollment headcount and the success rate of our underrepresented groups:

- As Strong Workforce funding has become less available, we have had to rely more on Perkins funds to support our tutors. However, Perkins funds cannot be used to pay International students. To address this, we invited financially aid–eligible students to serve as volunteer Teaching Assistants in the lab, allowing them to meet the requirements to be hired as paid tutors in their final year at De Anza College. This approach has increased the diversity of our tutoring team. We will continue this outreach to financial aid students while seeking Strong Workforce funds so that we can also hire International students.
- Paid tutors are now being encouraged to prepare and present workshops on important constructs present in all programming languages taught by the Department. Tutors are learning skills which will assist them in four-year institutions and grad work; students have an opportunity to come and learn the topic with their peers.

6. If your goals (i.e., OKRs for Student Services) are changing or you are adding a new goal(s), please include them below. If new goals require resources, please list requested resources that were not included in your last program review.

Goal title	Goal description	Responsible parties	Collaboration with….	What evidence will you use to monitor progress?	How will you assess achievement of the goal?

Pedagogy changes in response to AI	Teach CIS students to make use of AI tools while changing pedagogy to assess students' skills in the basics of programming in the world of AI.	Clare Nguyen and Ron Kleinman and entire CIS Faculty department.	Professional Develop-ment	• Feedback from four-year institutions in particular UCI. • Feedback internally through course assessments and our faculty feedback in preparedness for CIS 22B and CIS 22C	• Assessments of Course Level Outcomes. • Survey of faculty. • CIS Canvas shell discussions.
Strengthen Cybersecurity Program	Attract students from underrepresented groups	Felix, Joseph, Mohammed, Sree	IBM and Cloud Range Cyber	Enrollment and success rates	New course in the program/degrees earned Earn NSA CAE-CD Designation

Fortunately, through the deft project management ability of our CIS Lab Coordinator, Di Liu, and the Perkins and Strong Workforce Program funds provided we have been able to continue our most important strategies:
-> Peer Tutoring Program where paid tutors assist students both online and in person. It is noteworthy to add that this program is bringing alive our lab again. CIS students were very reticent about attending in person. They are much more likely to come to campus and be in the CIS Lab where they can receive peer tutoring and converse with their peers.

-> zyBooks continues to be available free of charge to all our beginning programming students. This digital resource gives students an experience that cannot be readily duplicated by authoring our own resources now with AI. It truly guarantees that the student knows enough to

move on to the next course.

-> De Anza College collaborates with UC Santa Cruz and UC Berkeley on the NSF grant "Servingness in Computing through Excellence Scholars Transfer Pathway"

->Mirsaeid Abolghasemi who became full-time tenure track in Fall 2024 has stepped into the role of mentor for our students who wish to challenge themselves. He is the current Faculty Advisor for Competitive Programming Club.

8. How have these resources (or lack of resources) specifically affected disproportionately impacted students/clients? If you have not requested or received resources, still describe how your area has been able to serve disproportionately impacted students/clients.

For the positive differences please see the answer to #7.

Due to AI affecting negatively the number of entry level positions, hiring a mentor to directly interact with Silicon Valley Tech businesses is more important than ever before. Our students need to appreciate the level of expertise they must now achieve to garner that first job.

Students need to learn the critical thinking skills expected of them through such events as Hackathons and ICPC contests.

ICPC was exceptional in the support they gave us this year in supporting the event. We need budget to finance the other expenses such as custodians. Nothing is quite like the experience our students have when we are hosts and there is no one that has a problem joining because of the issue with traveling to another venue.

9. Refer back to your Comprehensive Program Review and Annual Program Review Update from the past two years under the section titled Assessment Cycle or the SLO website (https://www.deanza.edu/slo/. In the table below, provide a brief summary of one learning outcome, the method of assessment used to assess the outcome, a summary of the assessment results, a reflection on the assessment results, and strategies your area has or plans to implement to improve student success and equity. If your area has not undergone an assessment cycle, please do so before completing the table below.

Table 1. Reflection on Learning Outcomes (SLO, AUO, SSLO) Please note that the assessment featured in our 2024-25 Annual Program Review Update is what spurred the AI Usage Team into action.

Learning Outcome (SLO, AUO, SSLO)	CIS 22A Beginning Programming Methodologies in C++: Design solution, create algorithms, code in C++, document, debug, and test program for an introductory level program using appropriate design methodology incorporating elementary C++ programming constructs.
Method of Assessment of Learning Outcome (please elaborate)	Focus Group: Students reach out for assistance either question on concept, problem with completing an assignment or needing an extension. Five students' data collected. Students are asked to share screen showing one of their coding assignments. Student is asked to find, update, and/or explain segments of their code. N.B. 100% asynchronous course.
Summary of Assessment Results	Winter 2025: Of the five students only one could successfully navigate their code, make a change and explain what the code does. One student was able to somewhat fulfill these asks. The other three students were not able to find the part in their code and could not explain the code. Fall 2025: All five students were able to explain concepts implemented in their code, asked questions leading to deeper understanding, and update their code.
Reflection on Results	My test questions and some questions buried in the lab rubrics ask for explanations and updates. This has helped to focus students on learning the code generated by AI. Using AI to support learning can help reduce student stress. Knowing their grade is probably "safe" allows students to focus on learning.
Strategies Implemented or Plan to be Implemented (aka: enhancements)	I will endeavor to find ways to incorporate different activities for assignment including student videos explaining their code, pair assignments, and eventually in person testing on paper with a pencil for online classes.

Please email this form to your dean/manager.

5. Dean Manager Comments:

The Computer Information Systems Department continues to respond well to program review feedback and to the fast-changing technology landscape. I appreciate the department's efforts to expand both credit and noncredit pathways, particularly in areas such as Artificial Intelligence, which allow students to explore new fields while managing cost and academic risk.

Cybersecurity and AI remain important strengths for the department. Faculty have responded to growing student demand by expanding course offerings, participating in professional development, and using IBM's CyberCampus and CloudRange labs to support hands-on learning. The successful completion of Part 1 of the NSA CAE-CD designation reflects the department's focus on quality and alignment with national standards. At the same time, new AI courses and certificates demonstrate a thoughtful approach to teaching students how to work with emerging technologies while maintaining strong foundational skills.

Student engagement and equity are also clear priorities. Opportunities such as the Intercollegiate Programming Contest and DA Hacks allow students to apply what they are learning in collaborative, problem-solving environments that reflect real-world expectations. Peer tutoring and TA support, including targeted outreach, have strengthened student engagement and contributed to improved success rates for Black, Latinx, and Filipinx students. In addition, several faculty are actively engaged in OER and ZTC efforts to reduce textbook costs for students in courses across data science, database development, and project management programs.

I am pleased that the department has been approved for one new full-time faculty position, which will be very helpful in sustaining these efforts and supporting continued program growth. I would like to thank the RAPP Committee and College Council for their support. Overall, the CIS Department continues to demonstrate strong faculty collaboration, a commitment to equity, and a clear focus on student success and workforce readiness.

6. Vice President/Associate Vice President Comments:

The Computer Science & Information Systems Department continues to demonstrate exemplary leadership in innovation, workforce alignment, and equity-centered instruction. The department's rapid expansion of Artificial Intelligence and Cybersecurity pathways, including new credit and noncredit courses, certificates, and degrees, reflects strong responsiveness to industry demand and emerging technologies. Articulation of CIS 11 with UC Berkeley's Data 8 strengthens transfer pathways, while peer tutoring, TA programs, and hands-on learning through CyberCampus, CloudRange, hackathons, and ICPC competitions enhance student engagement and success. Notably, success rates for Black, Latinx, and Filipinx students have improved significantly. Continued investment in faculty capacity and industry partnerships will be essential to sustaining program excellence and workforce relevance.