Fullerton College

Self-study for Computer Information Systems Program

2025

Section 1: Introduction

1. Briefly describe your program, make sure to include how your program helps the College achieve its mission.

The Computer Information Systems (CIS) department is focused on improving student lives in three ways:

- By teaching skills and knowledge that are in high demand.
- Providing students with the opportunity to grow their critical thinking skills
- Fostering an environment of personal growth and achievement.

The CIS department consists of a wide variety of technical areas in the following areas:

- Microsoft Office applications, including Word, Excel, PowerPoint, Project, and Access.
- Programming and program design in a variety of computer languages including Python, Java, C++, C#, and JavaScript
- Cybersecurity classes and the Emerging Technology Lab that offers students training in

not only cybersecurity but also in technologies such as Cloud Computing.

- Web development, including classes in Web Design, Web Server management, and Web Server applications.
- Computer Game design and game programming with classes in Game Design, Game Narrative Design, Game Artificial Intelligence, and computer game engines and engine programming.
- Competitive Computer Gaming (Esports), including classes in Esports and opportunities for students to participate in competitive Esports.
- Computer Networking, which offers classes in network server management.
- Data Analytics, which includes classes in Python for Data Analytics, Excel for Data Analytics, and general database classes in Access, SQL Server, and Oracle

The CIS department is currently developing an Artificial Intelligence (AI) program, which will offer AI certificates and an A.S. degree.

Section 2: Students

2.1 Student Demographics and Enrollment Trends

1. Using the data provided by the OIE, describe the student population your department serves. Which demographic groups have the most enrollments in your program? Which student groups are underrepresented in your program? Has the demographic profile of your program changed over the last four years?

Enrollment trends from 2020 to 2025 show the following:
* Overall enrollment in CIS classes have slightly declined since 2020
* Enrollment of women as a percentage of overall enrollment has not significantly changed and women still represent 50% of male enrollment.
* Black or African American enrollment has not changed
* Hispanic enrollment has increased (50% to 53%)
* White enrollment has slightly declined (18% to 16%)

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2. Briefly describe course-level enrollment trends in your program over the past five years. Have the enrollment trends in your program changed over the last five years? To what do you attribute any changes or lack of changes?

The classes offered by the CIS department can be divided into beginning, advanced, and programming. Beginning classes are those primarily in introductory classes for transfer and

basic and applications classes (Excel, Word, etc). The enrollment in these classes have basically maintained enrollment in the last five years.

Advanced classes include networking, cybersecurity, and other advanced classes. These have generally maintained enrollment but have increased in the cybersecurity area.

Programming classes enrollments have generally maintained the same numbers for the last five years, but recent semester enrollments forecast a decline as AI affects programming.

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3. How do you monitor and modify course offerings, including time and modality, to ensure that students' needs are being met?

Regular department and division meetings.

2.2 Student Achievement

1. Using data provided by the OIE, describe overall student achievement counts, rates, and trends in your program over the past five years, these include: course success rates, degrees/certificates completion counts, transfer counts, licensing, job placement, wage improvements (not all of these measures apply to every program).

CIS success rate from 2021 to 2025 has been above the institutional standard of 62% but below the stretch goal of 80%.

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2. Are there student groups whose success rates are below the institution-set standard or whose success rates are below other student groups? What factors can explain this?

All student groups are at or above the institution-set standard success rate, except African American students, who are below the institution's success standard. One important reason for this shortcoming is the lack of department-level counseling and career guidance. The CIS department has recently created a class to guide students in choosing an appropriate direction in the CIS field, which should help students take appropriate classes

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3. In terms of your degree and certificate completers, are there any groups who are underrepresented in your completion data compared to the overall enrollment in your program?

The degree and certificate completion numbers are small and may not be significant for projections or analysis. This is likely due to the very high demand for students with specialized computer skills, which has occurred in the last few years. Students will take one or two classes in a specific area and then leave college to pursue a job.

However, those students who completed a degree or certificate show a higher percentage of African American students completing degrees than is reflected in the success rate. This further indicates that those students that have been put on the correct career path will succeed at higher numbers than is reflected in success rates.

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4. Are your students completing your degree and certificate program requirements in the expected time frame? Are there certain groups whose rates are below other student groups? Discuss any efforts to improve time to completion.

The data reflects a trend from 2021 to 2025 to complete certificates and degrees in less time. Currently, most degrees and certificates are completed in three to five years, which is less than in previous years. This is likely a reflection of CIS staffing shortages, which do not allow for degree/certificate classes to be offered every semester

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2.3 Student Learning Outcomes

1. Describe your program's processes and practices for defining, assessing, and analyzing student learning outcomes at the course (CSLO) and program (PSLO) level. Include a discussion of how your program uses the results of CSLO/PSLO data to inform course and program improvement efforts.

Individual instructors monitor the CSLOs for their classes and the CIS department meetings provide a forum for general discussion.

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2. (OPTIONAL/NOT REQUIRED) Using the data provided by OIE, describe the most salient results of CSLO or PSLO mastery rates. Did you find significant differences by race, ethnicity, gender, and other categories?

Section 3: Other Areas of Program Effectiveness

1. Document any substantial changes to your program curriculum since the last review and discuss what prompted these changes. Looking forward, what changes to the curriculum do you plan based on the emerging needs of your discipline, industry, student population, etc.

The two major changes to the CIS department curriculum is the addition of Esports course and AI courses. The Esports curriculum was created to provide dual enrollment classes linking partner High Schools in a path to Fullerton College.

The second major change is the addition of Artificial Intelligence classes. This new curriculum is based on the new and significant changes to the technology creating AI system.

These changes to the curriculum in the CIS department are designed to support student success.

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2. Please briefly describe opportunities your students have to apply and deepen knowledge and skills through projects, apprenticeship, internships, co-ops, clinical placements, group projects outside of class, service learning, study abroad, and other experiential learning activities that you intentionally embed in coursework or elsewhere in your program.

The Computer Information Systems Internship Program offers employers an excellent opportunity to engage motivated students who are building careers in information technology, cybersecurity, and information systems. Through the CIS 295 F course, students earn academic credit while contributing to their education on the job with an employer. Employers benefit from access to skilled, entry-level talent who bring current classroom knowledge, hands-on technical skills, and fresh perspectives to real-world projects. Participation not only strengthens the local technology workforce but also fosters long-term partnerships with Fullerton College's Business & Computer Information Systems Division—helping shape the next generation of IT and cybersecurity professionals.

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3. Describe any laws, regulations, trends, policies, procedures, or other influences that have an impact on your program. These can include things like Vision 2030, CALGETC, Common Course Numbering, etc.

No significant changes to CIS have been made based on changes to laws or regulations

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Section 4: Faculty and Staff

4.1 Population and Demographics

1. Using the data provided by OIE, describe your program's staff (full-time/part-time faculty, nonfaculty, classified). How reflective of your program's student population is your staff?

The CIS department's full-time and part-time faculty are not representative of the demographis of the students taking CIS courses

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2. Describe your program's staffing changes since fall 2021. How have these changes impacted your program's ability to achieve its strategic action plans?

Program staffing changes have included a new Full-time instructor. This addition to the CIS program has improved the department's ability to offer new classes, primarily in the Computer Gaming area, and to strengthen courses in emerging technology areas. This addresses the CIS department's strategic goals of maintaining offerings in current technology and expanding classes into new technologies.

4.2 Staff Support and Professional Development

1. Describe the regular discussions your program faculty are having about equitable grading, attendance, late work, extra credit policies, and other strategies to support equitable student success.

Regular department meetings provide a forum for discussion of grading, attendance, and other classroom-level policies. In addition, the Business Division has general policies for online classes, including assignments and grading. Since the required class material (textbooks and learning systems) has been standardized across classes, consistent grading and material presentation is controlled by mutual discussion at the department level.

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2. How have these conversations shaped practices or polices in your program? What action has arisen from these discussions? If no action has been taken, why not?

Based on cooperative department-level decision-making, the CIS department has enforced technology platform progress across multiple courses. These progressive technology platforms have included operating systems, software (Microsoft Office versions), programming languages and versions, and networking and cybersecurity platforms

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3. What additional areas of professional development could help your faculty and staff engage in this work?

Additional training is critical to enable the Faculty to maintain currency with current technology trends.

Section 5: Program Planning

5.1 Progress on Previous Strategic Action Plans

1. Please discuss the goals (Strategic Action Plans, SAPs) from your last self-study. Assess and explain your progress on each of the SAP.

* SAP1 – Create a Cloud Computing Program
This plan was focused on Cloud Computing technology but evolved to include cybersecurity. Resources initially identified for Cloud Computing were also used to start the Cybersecurity program. Overall, this plan was successful.

* SAP2 – Create Technology for Small Business Program
This program was partially successful. Classes were proposed and curriculum developed for classes that can be integrated with the general Business/Marketing/Management programs. However, creating a special program focusing specifically on small business technology needs is still in process.

* SAP3 – Create a department-funded tutoring program
A CIS department-specific tutoring program was not created, but a career class in CIS was successfully developed and approved.

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2. If additional funds were NOT allocated to you in the last review cycle, how did the LACK of funds have an impact on your program?

Not applicable

SAPs

Autonomous Device Plan

Short Description:
The robotic programming program in CIS needs to be expanded to include topics in the Autonomous Device (AD) program. This will include expanding the AD programming resources, adding new curriculum, and acquiring equipment to support classroom instruction

Measurable Outcomes:
The outcomes of this plan will be measured by the enrollments and completion of the Autonomous Devices courses.

College Goals:
3.2 Reduce equity gaps in degree/certificate completion

SAP Phase:
New

Resource Requests

Training in current AD devices

Enhancement:
This resource will support AD courses in the classroom

Personnel-Related:
None

Resource Category:
Training

Quantity:
6

Unit Cost:
$8,000.00

TotalCost:
$48,000.00

Drone equipment

Enhancement:
This will support classroom instruction and research

Personnel-Related:
None

Resource Category:
Equipment

Quantity:
30

Unit Cost:
$5,000.00

TotalCost:
$150,000.00

Robots (dogs)

Enhancement:
This will support class instruction and research

Personnel-Related:
None

Resource Category:
Equipment

Quantity:
10

Unit Cost:
$2,500.00

TotalCost:
$25,000.00

Robots (Human)

Enhancement:
This will support class instruction and research

Personnel-Related:
None

Resource Category:
Equipment

Quantity:
10

Unit Cost:
$4,500.00

TotalCost:
$45,000.00

Student assistants to helkp work with Autonomous Devices

Enhancement:
The Autonomous Devices program will involve the use of various pieces of equipment. This equipment must be maintained and deployed during and after classes. Student hourly resources will be necessary to manage this element of the program

Personnel-Related:
The Autonomous Device program equipment is an integral part of the program and requires hourly student support.

Resource Category:
Non-Faculty Personnel

Quantity:
4

Unit Cost:
$18,000.00

TotalCost:
$72,000.00

Expand the Emerging Technology Lab

Short Description:
Goal: Upgrade and modernize the Emerging Technology Lab to support instruction in Artificial Intelligence (AI), Data Analytics, and Cybersecurity. Objectives: • Establish the lab as a centralized hub for applied emerging technologies. • Upgrade facilities and infrastructure to support GPU-intensive workloads. • Enable cross-program collaboration for CIS, Business, and Engineering Technology students.

Measurable Outcomes:
Enrollment and success in the following courses: * Artificial Intelligence classes * Data Analytics classes * Autonomous Device classes

College Goals:
1.2. Increase equitable usage of apprecentiship/internship; 1.5 Outreach strategies for prospective students/family; 2.1 Equitable support services in Dual/Online/Night/Weekend; 2.3 Increase access to affordable course materials; 2.4 Increase access to academic support in course with DI

SAP Phase:
New

Resource Requests

Enterprise Servers

Enhancement:
Support AI and Data Analytics workloads

Personnel-Related:
None

Resource Category:
Computer Hardware

Quantity:
3

Unit Cost:
$2,500.00

TotalCost:
$7,500.00

Database/Analytics Software

Enhancement:
Enable instruction and data-driven projects

Personnel-Related:
None

Resource Category:
Computer Software

Quantity:
3

Unit Cost:
$2,500.00

TotalCost:
$7,500.00

Emerging Lab Staff

Enhancement:
The Emerging Lab, to support various CIS programs, requires student lab assistants. These will not only support the operation of the Emerging Technology Lab but also help other students use

the technology and complete assignments.

Personnel-Related:
Additional curriculum and the creation of the AI, Data Analytics, and Autonomous Devices programs will use resources in the Emerging Technology lab. The hourly cost is per year

Resource Category:
Non-Faculty Personnel

Quantity:
4

Unit Cost:
$18,000.00

TotalCost:
$72,000.00

Develop a Data Analytics Program

Short Description:
Goal: Establish a Data Analytics pathway integrated into existing CIS programs, including dual enrollment opportunities with local high schools. Objectives: • Design and launch a sequence of Data Analytics courses. • Embed analytics modules into office automation and database courses. • Expand dual enrollment offerings for high schools.

MeasurableOutcomes:
Success and completion in Data Analytic courses.

College Goals:
1.2. Increase equitable usage of apprecentiship/internship; 2.3 Increase access to affordable course materials; 3.2 Reduce equity gaps in degree/certificate completion; 3.4 Increase collaboration with universities

SAP Phase:
In Progress

Resource Requests

Course-Level Servers

Enhancement:
Hands-on database and analytics instruction

Personnel-Related:

None

Resource Category:
Computer Hardware

Quantity:
5

Unit Cost:
$10,000.00

TotalCost:
$50,000.00

Database Software Licenses

Enhancement:
Support data visualization and analytics curriculum

Personnel-Related:
None

Resource Category:
Computer Software

Quantity:
1

Unit Cost:
$75,000.00

TotalCost:
$75,000.00

Faculty Database Training

Enhancement:
Professional development in analytics tools

Personnel-Related:
None

Resource Category:
Training

Quantity:

1

Unit Cost:
$30,000.00

TotalCost:
$30,000.00

Develop an Artificial Intelligence Program

Short Description:
Goal: Create an Artificial Intelligence program that supports applied learning across Business, CIS, and interdisciplinary divisions. Objectives: • Launch AI-focused courses. • Equip classrooms with AI-capable computing resources. • Integrate AI applications into existing curriculum.

Measurable Outcomes:
Successful completion of AI courses and AI related Business and CIS courses

College Goals:
1.4 Reduce equity gap in Black/AA college enrollment; 2.3 Increase access to affordable course materials; 2.6 Reduce equity gap in persistence for Black/AA students; 3.2 Reduce equity gaps in degree/certificate completion; 3.4 Increase collaboration with universities

SAP Phase:
New

Resource Requests

AI level desktop classroom computers

Enhancement:
In-class AI model training

Personnel-Related:
None

Resource Category:
Computer Hardware

Quantity:
35

Unit Cost:
$5,500.00

TotalCost:
$192,500.00

AI Laptops

Enhancement:
Mobile AI development systems

Personnel-Related:
None

Resource Category:
Computer Hardware

Quantity:
15

Unit Cost:
$4,500.00

TotalCost:
$67,500.00

AI Faculty Training

Enhancement:
Training in current AI model and agent development tools

Personnel-Related:
None

Resource Category:
Training

Quantity:
1

Unit Cost:
$20,000.00

TotalCost:
$20,000.00

Resource Requests

Electrical upgrades in CIS Classrooms

Enhancement:

Upgrade electrical systems in current CIS classrooms to support new equipment.

Personnel-Related:
None

Resource Category:
Facilities
Quantity:

1

Unit Cost:
$75,000.00

TotalCost:
$75,000.00

Electrical and HVAC upgrades to Emerging Technology Lab

Enhancement:
Upgrade electrical systems and expand existing HVAC systems to support additional server hardware

Personnel-Related:
None

Resource Category:
Facilities
Quantity:

1

Unit Cost:
$200,000.00

TotalCost:
$200,000.00