

CSIS Department, Spring 2020
Contributors include these CSIS
Faculty:

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SIGNATURE PAGE:

This program review report for 2013 – 2019, is respectfully submitted by these members of the Grossmont College CSIS Department.

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SECTION 1 – OVERVIEW.

DEPARTMENT HISTORY & PREVIOUS PROGRAM REVIEW RECOMMENDATIONS

PURPOSE OF SECTION 1.1: To help the committee understand the history of the department, what your department does, what population you serve, and your overall place in the college. Include any information that helps the reader understand your department, such as which courses are primarily GE, programs added, new degrees, certifications, where your students come from, where they go, and a description of your faculty (the role of FT, PT and staff). Student population specifics (transfer, basic skills, CTE, etc.) are useful as well.

1. Introduce the self-study with a brief department history. Include changes in staffing, curriculum, facilities, etc. (You may wish to cut/paste your previous department history and then add to it). Additionally, please list degrees and certificates your department offers.

General Description. The Computer Science and Information Systems (CSIS) Department offers a variety of computer related curricula that prepare a student for a career in this rapidly and constantly changing and high-demand area. There are five related, but distinct areas of emphasis designed to provide corresponding job entry skills. These are:

1. Computer Programming
2. Cybersecurity and Networking
3. Information Technology Support Specialist
4. Web Design
5. Computer Science Associate Degree for Transfer

Each area of emphasis can lead to an Associate degree or to a Certificate of Achievement except, of course, the Computer Science transfer degree which doesn't include a Certificate of Achievement.

Full Time Faculty:

We currently (Spring 2020) have five full time faculty, one of whom has been 100% reassigned as College Distance Education Coordinator for the past several years. Alphabetically, and with their area of expertise, they include:

Janet Gelb – Grossmont College Distance Education Coordinator, 100% reassigned time for at least three years

Robert Gillespie – in his fourth year, Robert specializes in the Computer Programming area.

Jim Hotz – Computer Programming and Introductory classes

Hau Nguyen – in his third year, Hau was instrumental in starting our new Cybersecurity program which became official in our catalog as of Fall 2019

Clifton Quinn – department chair for several years and teaches Introductory classes and Web Development

Full time faculty have the responsibility within our department to modify curriculum, arrange all scheduling, attend committee meetings and typical full time tasks.

Adjunct faculty:

Currently we have twenty-five or twenty-six adjunct faculty, each with their own set of skills. Some have experience in computer programming, some with networking, cybersecurity, graphics, video game development, web development and other areas. We have been fortunate to attract and retain an excellent group of talented adjunct and we consider ourselves lucky.

As mentioned above, the CSIS discipline continues to change ever so fast making it difficult to stay current and relevant in the recent budget crisis years. Nonetheless, the full time and adjunct faculty have consistently collaborated to keep our course offerings and our classroom labs as close to state-of-the-art as possible. A few of our recent successful highlights include:

- In Computer Programming, we have added two new courses – Introduction and Intermediate Python Programming.
- All of our computer programming, networking, cybersecurity, IT Support and web design courses are now being offered in hybrid and/or online format.
- We added a brand new degree and certificate of achievement in the area of Cybersecurity and Networking, which is a fast-changing field and is growing quickly in student demand.
- Web Design Area of Emphasis has been completely redesigned with new courses having been developed and the content brought in-line with needs of industry and the changing face of software development for the web.
- The Small Computer Specialist degree and Area of Emphasis courses have been redesigned and they are part of a new degree and COA called the “Information Technology Support Specialist”.
- We successfully completed the daunting process of creating a new Computer Science Associate Degree for Transfer which has been a very successful program this year with the classes filling quickly and demanding more sections be added.

In addition to providing courses in the above areas of emphasis, the department is cooperating with other divisions and departments across Grossmont College in order to provide cross listed or team taught courses that assist not only in the infusion of computer skills into those other discipline areas, but also to introduce those students to computers in more detail. Two examples include 1) recent collaboration with the BOT department to identify candidate courses, 2) developing a course in conjunction with the Business department adding an emphasis on added content in “Social Media and Internet Marketing”.

In recent years there has been cross-campus discussion related to a Computer Literacy course being added to General Ed or infusing a variety of General Ed courses with computer literacy content. No decisions have been reached on these efforts to date.

CSIS Vision and Mission. Members of the department developed the following vision and mission statements:

Vision Statement: Students in the Grossmont College CSIS Department shall have access to high quality technology-based instruction in the use of computers for the purposes of academic transfer, career enhancement, and/or personal development.

Mission Statement: The Grossmont College CSIS Department will provide quality education to students based on a comprehensive, relevant curriculum that provides students with the ability to transfer, enter the workforce, and/or promote life-long learning.

CSIS Department Concerns (Challenges) & Trends. Major concerns (challenges) and trends that exist within the department today are:

1. A very positive trend over the last several years is the increased student demand for our programming courses. This is wonderful as there was a significant downturn in enrollment several years ago for several reasons beyond our control. There now is a sense among students and within the community that computer programming is once again a highly sought-after skill set for career opportunities.
2. The greatest concern for our department has been that of upcoming retirements for three of our five full-time faculty members. These retirements could commence as early as 2020 for one faculty member and the other two potential retirements could take place by 2021. This will leave a huge knowledge gap in our department if we are not allowed to hire at least one replacement soon. We are lucky enough to be on the current list of departments which can hire this current semester, Spring 2020. Obviously, that has been delayed along with all other new hires. We hope to be one of the first new faculty hires once operations return to normal.
3. An ongoing challenge is to continue to identify and attract highly skilled adjunct faculty who are on the cutting edge of the new technologies we are constantly addressing. There is competition for these folks among the colleges in San Diego County as well as a need to offer attractive remuneration and benefit incentives. The AFT Union is working to address these needs, and we expect to be able to attract more highly skilled instructors who are presently working in the CSIS industry.
4. An ongoing concern is having significant technology budget each year to keep both our computer classroom hardware (~100 PCs) and software as close to state-of-the-art as possible. Along with this concern is another which allows our full time faculty to have their office and/or portable hardware/software at state-of-the-art so they can be evaluating, researching, and testing new hardware and/or software for potential introduction into our curricula.
5. Another ongoing concern is the development of full offering programs (CIS and CS) at Cuyamaca College that mirror Grossmont CSIS department offerings and result in a

reduction in course enrollment. We continue to work collaboratively with the CIS/CS department at Cuyamaca College to offer these duplicated courses that traditionally have low enrollment only once per year at each of the colleges so that students will hopefully not have to deal with cancelled courses and be able to continue with their educational goals and completion of their degrees and certificates.

Changes/Needs Over the Next Several Years. How well we address our concerns and challenges will determine our exact needs over the next few years. Our current number of full-time faculty will not be enough to meet student demand should one or more retirements take place. Increasing student enrollment will require the identification and hiring of new full-time faculty and highly skilled adjunct faculty with the required skill sets. Full-time faculty will require training/education funds to be set aside and identified in a “hard” budget line-item to enhance and/or acquire new skills. We believe that we have enough facilities to meet increased enrollment. As technology needs change, we will require the purchase of new classroom software and hardware and possible server hardware.

For those who want more detail on what we actually offer and who this is for, read on: Following is more detail on our offerings and target careers:

COMPUTER SCIENCE AND INFORMATION SYSTEMS

The CSIS Computer Programming major is intended for the two-year vocational student who plans to gain entry level employment as a programmer as well as for students who want to learn one or more particular languages, as well as those who plan to transfer to a four-year college or university. Students who complete the sequence successfully are able to write and maintain code for program modules from design documents and specifications prepared by senior programmers or analysts. They convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into a computer language.

The CSIS Cybersecurity and Networking Program leads to an entry-level position which specializes in networking and cyber defense. The Cybersecurity and Networking degree and COA are brand new to us as of Fall 2019. Students completing this sequence will be expected to assist network managers and cybersecurity managers in small, medium and large-sized organizations.

The CSIS Information Technology Support Specialist Program prepares students for positions in industry as an Information Technology Technician, involving the direct use of microcomputers and microcomputer applications for business administration, decision support, and financial applications. Students who complete this sequence are qualified to enter careers in which they function as IT Specialists, Help Desk Technicians, Customer Service Assistants, and other technology-related positions.

The CSIS Web Design Program leads to an entry-level position which specializes in the planning, production, and maintenance of an Internet website. Students completing this sequence will be expected to assist with the designing, building, and updating of a commercial-level web site. Students will have an exposure to both the artistic and technical sides of this field. The program curriculum provides the student with practical experience using state of the art software and hardware typically found in the field of professional web design.

Degrees and Certificates Offered in Spring 2020

Associate of Science, Computer Programming
Associate of Science, Cybersecurity and Networking
Associate in Science, Information Technology Support Specialist
Associate in Science, Web Design
Associate Degree for Transfer in Computer Science
Certificate of Achievement, Computer Programming
Certificate of Achievement, Information Technology Support Specialist
Certificate of Achievement, Cybersecurity and Networking
Certificate of Achievement, Web Design

Career Opportunities

Computer Programmers
Information System Specialists
Documentation Specialists
Programmer Analyst
Applications Developers
Web site Developers
System Specialists
Computer Software Engineers
Computer Systems Security
Technicians
Network System Specialists
Systems Installers
Telecommunications Analyst
Network Engineers
Network Administrators
Information System Specialists
Computer Support Specialists
Network and Data Communications

Analyst
Computer Security Technicians
Information Technology Specialists
Information Systems Coordinators
Technical/Application Support Specialists
Customer Service Developers
Computer Support Representatives
System Specialists
Help Desk Technicians
Help Desk Support Specialists
Training and Support Specialists
Database Support Specialists
Web Application Director
Project leader
Project Manager
Web Developer
ISP's and Web Search Portal Developers
Web Master

PURPOSE OF SECTION 1.2: To help the committee understand what the last program review recommendations were, and how your department addressed and implemented them.

2. Your last program review contains the most recent Academic Program Review Committee Recommendations for the program. Describe changes that have been made in the program in response to recommendations from the last review including any activity proposals funded and what the results were. (Be sure to use the committee recommendations and not your own). Include the recommendations from the last program review in this section.

Here is the set of recommendations from our last Program Review:

- Continue the Computer Science Information Systems programs at Grossmont College (1)
- Continue outreach activities with the community and local high schools (2)
- Continue articulations with transfer institutions (3)
- Work closely with Cuyamaca College to enhance the synergy of two institutions working together (4)

Wow, we have worked tirelessly on all of these recommendations!

#1 – we are still around, so this is accomplished.

#2 – this is one area where we realize we can do better. We have visited high schools, we have participated in Open House events, and we have several current articulation agreements in place, but in truth, we can do better here.

#3 – maybe it was due to the recommendation, but as of Fall 2019, we have put in place, after a LOT of work, a wonderful Associate Degree for Transfer in the field of Computer Science. You may be amazed that this has not been in place for decades. Well, it is not actually an easy nor clear process, and we owe a debt of thanks to Maria (Dee) Aceves who played a great big role in helping this become a reality. For decades we have offered a “Computer Programming” degree, but in the past few years, San Diego State has become so impacted that it became necessary for a student to actually have a ADT degree in order to have a chance to get accepted to SDSU as a transfer student. Our counselors were literally telling students to go to Southwestern College, as they did have the C.S. ADT. Now that we have this ADT, we have seen a big jump in the number of students coming to our department. This has taken a lot of work, and a BIG thanks to Robert Gillespie who jumped through the hoops to make this happen. Thanks Robert and Dee!

#4 – this has been a big part of our involvement with the Curriculum Committee the past several years. We in CSIS also recognize the torture (ok, challenges) that students, faculty at both institutions, and counselors at both colleges have endured with similar classes with different course numbers. This has been crazy! In some cases, the names and numbers were similar, such as CSIS 110 and 119, but many others are different. Example, Grossmont Colleges Intro and Intermediate Java classes are CSIS 293 and 294, and at Cuyamaca, they are in their CS Department, not CIS, and they are 281 and 282. ??? Where is the sense in that? Well, we can put the blame on folks who were here long ago. This has its history based on the fact that since there were some disagreements over twenty years ago, the Cuyamaca computer folks decided to not be CSIS, but to become both CIS and CS. That looks like a great solution at that time, no need to align, no need to get agreement, etc..., but in the long run, a big pain for many people.

To help alleviate the pain, the CSIS group went through the literal pain of re-naming several classes and we agreed to use similar names and numbers whenever possible. In the past two years we at Grossmont have re-named and re-numbered several classes, including our old CSIS 114 is now CSIS 120 and matches the name

and number with Cuyamaca. We have also done this with the new CSIS 125, 264, 264 and 265. All of these are in the new Cybersecurity program, and this allows students to attend Grossmont or Cuyamaca as they like. We have also created several agreements to work with them in our scheduling process. For example, we offer JavaScript in Fall, while they do in Spring, and so on.

Can we do better in all the recommendations? Yes. But..... we have come a long way!

SECTION 2 - CURRICULUM DEVELOPMENT AND ACADEMIC STANDARDS

To answer these questions, refer to your department's catalog descriptions from the most recent college catalog (see "Courses of Instruction" section. This is the blue section).

If your program has an Associate Degree or Certificate program, refer to the relevant pages from the catalog (see "Associate Degree" section. This is the yellow section).

PURPOSE OF SECTION 2.1: To describe how curriculum is maintained and/or developed.

2.1 Describe how your course offerings have changed since the last program review. Have you added or deleted courses since the last review? If so, why? Include new or deleted programs, degrees and certificates.

Oh my, we have made a great deal of changes in the CSIS Department over the past six years! We have deleted older degrees which are no longer current and created new degrees to meet the needs of 2020 and beyond.

A list of degrees we have changed includes:

- Deleting the old-fashioned 'Local Area Network (LAN) Support Specialist' Degree and Certificate of Achievement (COA), with a much more modernized degree called the 'Cybersecurity and Networking' Degree and COA.
- Deleting the outdated 'Small Computer Specialist' Degree and COA and replaced with a much more up to date 'Information Technology Support Specialist' Degree and COA.
- We have added a brand new 'Computer Science Associate Degree for Transfer' as of Fall 2019 which has already brought a significant number of new students to Grossmont College.
- We have added a new "Data Science" COA which incorporates classes from a variety of departments, such as Math, Physics and Geography.

We have deleted over ten older courses which were no longer relevant, and we added the following courses in the past few years. Also, whenever possible, we are working together with Cuyamaca College's CIS / CS Departments to use a similar numbering system for our courses. Here are some that were added:

- CSIS 120 Computer Maintenance and A+ Certification
- 121 Introduction to Cybersecurity
- 125 Network + Certification
- 130 Windows Server: Installing and Configuring
- 147 Social Media and Internet Marketing
- 213 Linux System Administration
- 240 Discrete Structures
- 250 Introduction to Python Programming
- 263 Security+ Certification

- 264 Ethical Cybersecurity Hacking
- 265 Computer Forensics Fundamentals

How about that?!? That is a lot of new courses, THREE new degrees (two of which also have COA's), a new COA, and several Certificates of Proficiency along the way.

PURPOSE OF SECTION 2.2: To understand your practice for reviewing outlines. For example: under what circumstances you submit a new course, a modified course, or a course update to the curriculum committee.

2.2 Describe your department's practice for determining that all course outlines reflect currency in the field, relevance to student needs, and current teaching practices.

As the reader is probably aware, the material and the actual courses in the CSIS Department are changing in a rapid fashion. Not all courses change quickly, however we have new languages which grow in popularity, such as Python Programming, Linux Operating Systems, Video Game Development and constant changes in Web Development, let alone the dramatic changes in Cybersecurity.

Each of the faculty members who teach in our department are tasked with remaining current in their field. In fact, most of our adjunct faculty currently or recently worked in their field of expertise.

In regard to semester-to-semester changes, typically we have the faculty who teach the courses do their own textbook selection, they are encouraged to keep up with Professional Development and they are encouraged to discuss their books and methods with other faculty in their area.

PURPOSE OF SECTION 2.3: Explain how you incorporate new material in your courses on a semester-to-semester basis to maintain relevance and address current issues related to your discipline within the existing course outline.

2.3 How does your department use student engagement strategies in the classroom? How are your faculty including current issues in course content? Consider environmental, societal, ethical, political, technological, and/or other issues when answering this question.

This is a difficult question to answer. I know we have some very creative faculty, and I absolutely know what some of the faculty are doing. Let me provide a few examples:

One adjunct member, Julie Hansen, actually was awarded the President's Award for outstanding Adjunct Faculty, in large part for her creative engagement ideas. Julie has her class, CSIS 110, in teams all throughout the semester, and during the last half of the semester, they create a simulated real-world project of starting a 'breakthrough technology' company. The class creates the Business plan with Word, a presentation with PowerPoint, had data slides created with Excel and creates the Database portion with Microsoft Access. To top it off, the whole presentation is posted on a live web site.

Several other CSIS 110 faculty are in the process of doing this in their classes and using Julie's class as an example.

One of our full-time faculty, Robert Gillespie, uses very up-to-date examples in his Intermediate Java class where the students create programs to pilot drones, using a network set up in class, as well as studying and creating programs based on blockchain technology. Robert has also just recently received another patent for his own technology.

Both Hau Nguyen and Clifton Quinn attended a conference in Shreveport, Louisiana which was designed specifically for Cybersecurity Programs in Community Colleges. The knowledge and connections gained from this conference were invaluable in both teaching the Cybersecurity classes as well as getting relevant material for our classes.

Hau Nguyen, a full-time faculty member, has traveled to several conferences in the past few years to share how he uses a variety of tools to teach Cybersecurity and Computer Science in our classes.

James Wallerstedt, an adjunct faculty teaching Web Development has created an entire Web Development curriculum based on the Zero Textbook Cost model. He utilizes a variety of Internet-based tools to assist in teaching the class. We hear wonderful feedback from his students. He also has each student create real-world websites, such as a current resume, which thoroughly engages the students.

For many of the faculty, we don't always see exactly what they do in their classes other than through active discussions and the regular evaluations. We talk about 'engagement' activities in our semester faculty meeting; and because we are in the constantly changing discipline of technology, we are always discussing those topics with each other and necessarily our students. We do keep an open ear as full-time faculty members to listen to our students and their experiences.

PURPOSE OF SECTION 2.4: To describe what the department does to maintain consistently high academic standards amongst its faculty.

2.4. What orientation do you give to new faculty (both full- and part-time), and how do you maintain dialogue within your department about curriculum and assessment? What strategies do you have in-place that ensure consistency in grading in multiple sections and across semesters (e.g., mastery level assessment, writing rubrics, and departmental determination of core areas which must be taught)? Consider department practices, academic standards, and curricular expectations (i.e. SLOs and teaching to course outlines)?

All full-time faculty are provided with a host of orientation methods. These are provided by the college and our department. We have been lucky to hire two new full-time faculty in the past six years, and we were lucky to get two exceptional people, both of whom came to us with a great deal of real-world college-level teaching experience. Heck, in some ways they could or should be orienting some of us older faculty as they are both close to real-world experience and are very skilled, which is why we hired them!

As for new adjunct faculty, we never just place someone in a class and ignore them. Each new adjunct faculty has several pieces of formal orientation, and then the rest is dependent on the individual. We have sample approved syllabi which each new person would get, along with the official course outlines for their course. As of a couple years ago, all new faculty in our department are required to complete the Online Teaching Certifications as required by our college for teaching with Canvas.

In regards to consistency across multiple sections, we have get-togethers on a regular basis. For each class the method is different. For example, all of the faculty teaching the Java Programming and

C++ Programming classes have agreed to use similar textbooks, which has been a big help. As for their grading and methods, they are all experienced and they share amongst each other.

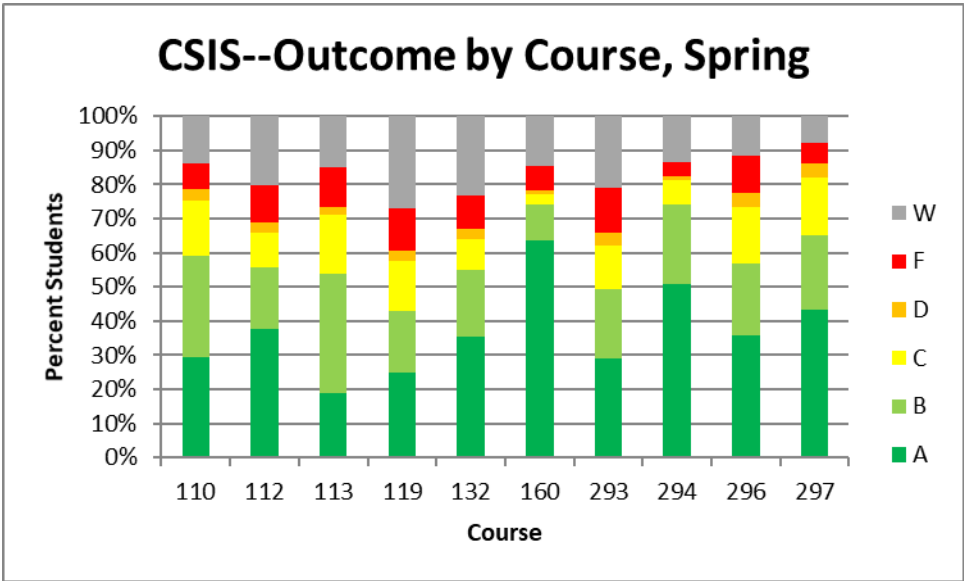
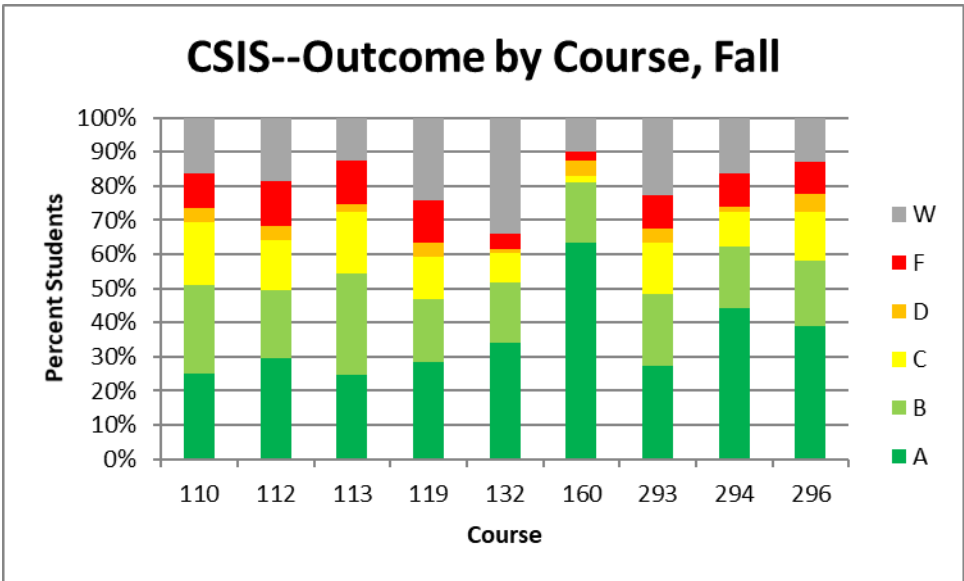
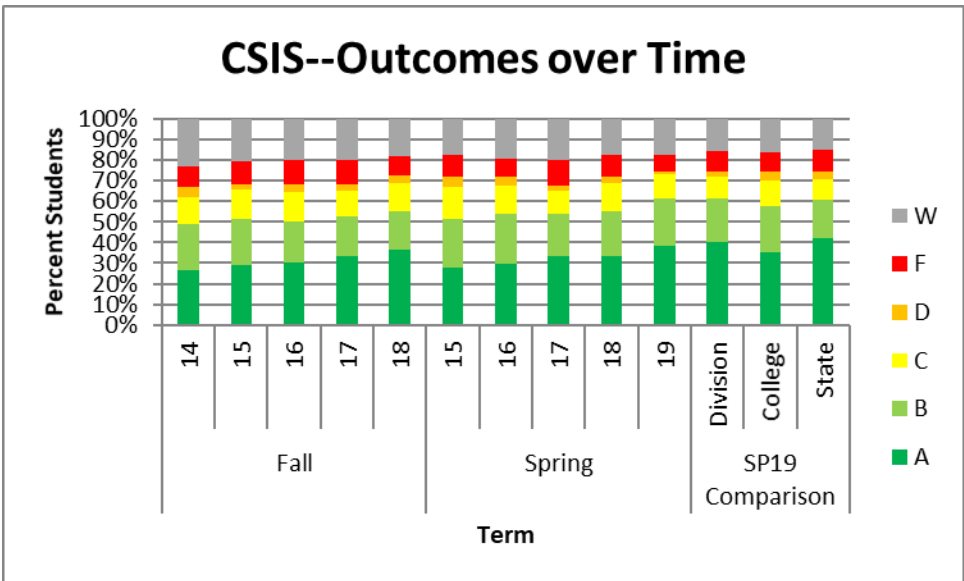
For our largest class, CSIS 110, we have ten or eleven sections each semester. What we have done there is to have a 'master' class set up by one full-time instructor, and then this class is rolled out, or distributed, through Canvas to all the adjunct faculty. Each person is allowed to customize as they like, within reason, but this establishes a level of consistency. The faculty meet at least once per semester, and there is ongoing email communication for sharing ideas and methods. A benefit of this consistency appears in our Open Labs with tutors, as the tutors see students from all the sections and there is a great deal in common across all the sections.

PURPOSE OF SECTION 2.5: To gauge the overall patterns of student success, retention, and grade distributions across the course offerings in your department. Here the committee is looking for explanation on unusually generous or rigorous grading patterns.

2.5 Referring to the Grade Distribution Summary graphs (see Appendix 1), comment on how your department patterns relate to the college, division and statewide patterns. For course-by-course graphs, provide an explanation for any courses with different grade/success patterns than others. This may relate to major's courses vs GE, first-year vs second-year or basic skills vs transfer. Please describe how the department handles any unusual grading patterns. If you have any information that allows calibration of your grading data to external standards (performance of your students on standardized tests or licensing exams, transfer and/or employment success) please provide those to us and explain the connection.

To me this is interesting to see this graph of Division, College and Statewide results. I am curious if the Statewide is just for CSIS or for all classes, as many colleges do not have a 'CSIS' Department, for example, at Cuyamaca it is called CIS and CS. Regardless of that, just look at our Spring 2019 results, and if you slide your eyes to the right, you will see ALMOST EXACT scores between our CSIS and the other three. Seriously, it is almost uncanny how we are similar. To me, personally, I think there are too many "A" grades awarded, as having 40% of students receive a grade of "A" – Outstanding, seems pretty weighted on the lenient side. I am curious to see what the numbers are for the Math Department! Isn't "C" supposed to be "Average". Hmmm.... Anyway, the graph below shows we are directly in line with state averages.

Appendix 1. Grade Distribution Summaries



PURPOSE OF SECTION 2.6: To evaluate the department's success with course delivery methods in online vs. hybrid vs. face-to-face platforms.

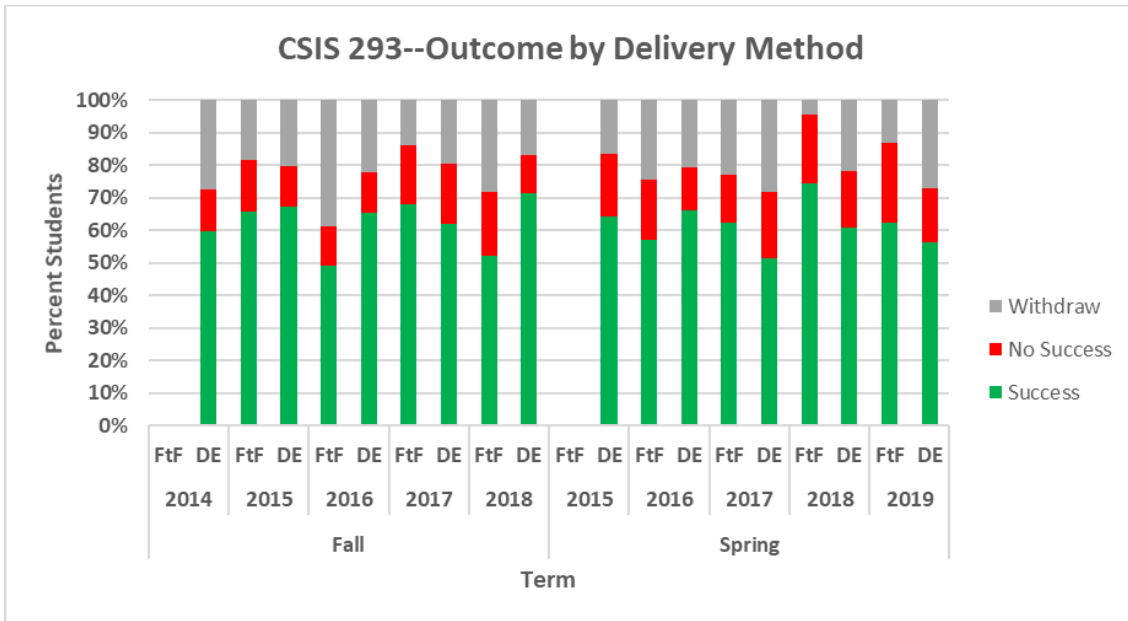
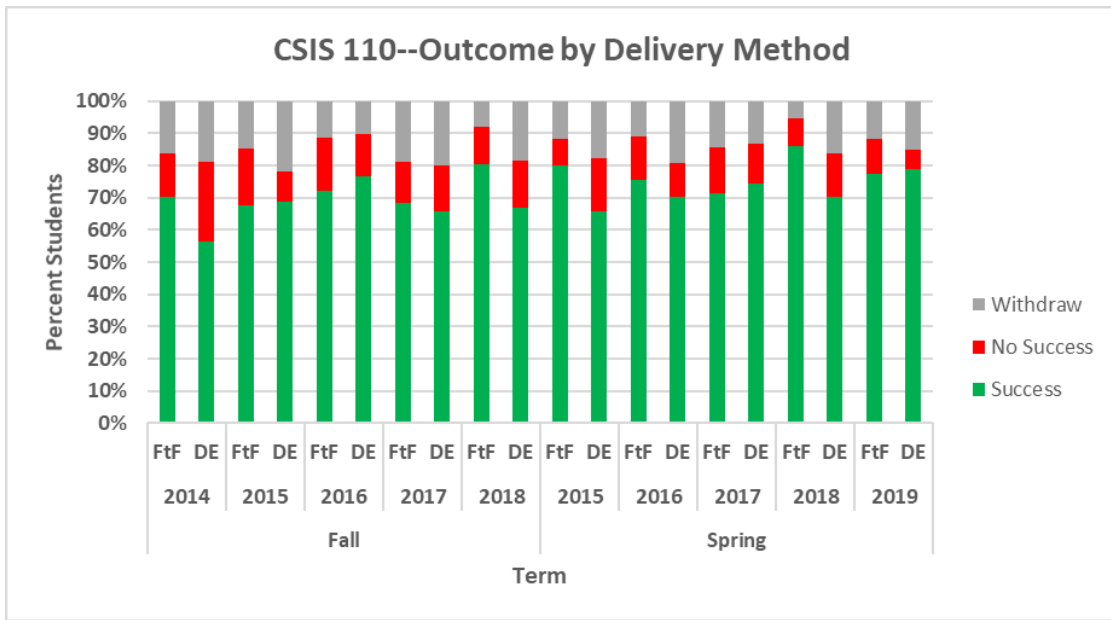
2.6 If applicable, provide a comparison of the retention and success rates of distance education (online) sections (including hybrid) and face-to-face sections. What are your department policies on course delivery method? Is there anything in the data that would prompt your department to make changes? (Required data will be provided by the Program Review Data Liaison – insert graph here).

The policies of our department regarding online and hybrid and face-to-face include these:

- All of our Intermediate-level Programming classes have traditionally been offered as a hybrid or face-to-face class. This has been done to ensure that the student has spent some time with one of our experienced faculty and is not able to get a degree 100% online. Should that policy change? Perhaps, and that is up for current debate. Some say we should have 100% online degree, others say we should require at least some on-campus time.
- In regards to most programming, cybersecurity and networking classes, we feel that there should be an online option as well as a partially on-campus, or 'hybrid' option. The trend is towards some very excellent tools online complementing the actual face-to-face time.
- Whenever possible, a policy exists that before a faculty teaches 100% online, that this teacher should teach at least one section on-campus. This ensures that the faculty member knows the campus, has been in the Open Labs, knows the on-campus staff, etc.

As you look at the graph of retention and success between distance education and on-campus classes, the numbers actually surprise me in how well we in CSIS retain our students. Across campus, it seems normal to hear another faculty member say something such as, "our online students drop real quick, down to 50%" or some number like that. Well, if you look at 2019, you will see that for CSIS 110, the retention rate is well over 70%, and closer to 80%

Now for CSIS 293, this class in our Introduction to Java Programming class, the numbers are a bit lower. CSIS 110 is a requirement for all Business majors, where 293 is an Introductory class in the challenging subject of Java Programming. The Success rate is closer to 60% than 80%, but the numbers are not that different between DE and On-campus. Certainly the numbers are not more than I would expect. Can we do better? Yes, and on the other hand, Programming is simply not for everyone.



2.7 If applicable, include the list of courses that have been formally articulated with high schools. Describe any articulation and/or curricular collaboration efforts with K-12 schools. (Contact the Dean of CTE if you have questions).

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PURPOSE OF SECTION 2.8: The committee wants to gauge if students are able to transfer successfully to four-year universities via your articulation agreements.

2.8 Please describe how the program ensures that articulations are current. Identify any areas concern or additional needs that your department has about articulation with four-year institutions.

We discuss with our campus Articulation Officer, Maria (Dee) Aceves.

SECTION 3 – STUDENT LEARNING OUTCOMES (SLOs)

The SLO Cycle is summarized in figure 1 below.

**Figure 1
SLO CYCLE**



*Five-Step Assessment Process for Continuous Improvement
of Student Learning at Berea College*

PURPOSE OF SECTION 3: To show how SLO assessments are used to improve teaching strategies, develop curriculum, modify and/or update curriculum, and guide program planning.

3.1 Describe any changes (e.g., addition/deletion of SLOs, postponement of assessments) your department has made to your SLO assessment cycle. Include a brief description of why these changes were necessary. **NOTE: Changes should include reassessment of SLOs requiring further attention.**

The CSIS department last year decided to take a new, fresh approach to SLOs and the SLO cycle. This began by starting at the highest level and working down.

We first looked at our program/department level SLOs and decided they needed updating based on where the focus lies within the department and the clear outcomes we want students to have going forward. We came up with outcomes that were more precise to and aligned with

the current roles our programs play in a student's progression on to the university or on to a career.

These new SLOs will be submitted for change this semester, and these umbrella SLOs will help guide us and, indeed, have helped guide us as we drill down on individual course SLOs.

Certain faculty also met with the Grossmont SLO coordinator to get guidance on best steps and practices moving forward which was very helpful.

Our department has not had a well-defined approach to assessing SLOs, so we therefore established a team to define a clean, effective approach on a handful of courses so that we might duplicate that approach across all our courses. We included both full-time and adjunct faculty on this team, and we started with one of our larger areas – programming courses for the Computer Science ADT/AST.

1. **Program / Dept Alignment:** The team first established a dashboard matrix of courses and program-level SLOs to cleanly & quickly identify which courses currently were mapped to certain SLOs. This would, going forward, help us identify which program-level SLOs were lacking among individual courses, etc.
2. **Identify Outcomes:** The first step in the SLO cycle, as referenced in the above Figure 1 graphic, was to identify outcomes. We started with the existing SLOs for two courses which spread across about 10 sections. Our SLO team identified more accurate outcomes based on the recent alignment of these courses to the state-wide standards.

Updates to these course SLOs will also be submitted this semester.

3. **Assessment Process:** Next, the team devised an assessment approach that would work well with the mechanics of our typical courses.

One example assessment mechanism was that we would incorporate a standard online quiz in Canvas shared across all sections and their instructors to standardize the assessment process regardless of individual instructor teaching methods. This teacher-agnostic approach would help us level the playing field when it came to assessment.

4. **Gather & Evaluate:** We are still bringing this online among all our faculty in the programming area, but the results that were collected and evaluated were very helpful and will be addressed further down.
5. **Share Results:** We then shared our results amongst the team. This was helpful and, because of the approach to use agnostic assessment mechanisms across sections, it was easily understood between instructors since we were working off of the same type of results.
6. **Improve:** The results showed unexpected holes where instructors could then understand where they need to put more emphasis. Again, because the multiple instructors were working from the same assessment baseline, improvements were easier to discuss and there was less embarrassment because similarities could be seen among instructors.

3.2 Give examples of how your department/unit has used SLO assessment results to improve a course, course sequence, and/or program over this program review cycle. In your narrative, please pay particular attention to assessment of courses that directly lead to a certificate/degree/transfer (e.g., English 120, Psychology 120) and/or constitute a high enrollment course. For help with this prompt, please see the chart on the following page:

Examples of Changes that *May* be Implemented as a Result of Assessment

| | |
|---------------------------------|--|
| Changes to the Assessment Plan | <ul style="list-style-type: none"> • revision of intended learning outcomes • revision of measurement approaches • changes in data collection methods • changes in targets/standards |
| Changes to the Curriculum | <ul style="list-style-type: none"> • changes in teaching techniques • revision of prerequisites • revision of course sequence • revision of course content • addition of courses • deletion of courses |
| Changes to the Academic Process | <ul style="list-style-type: none"> • revision of advising standards or processes • improvements in technology • changes in faculty staffing • changes in frequency or scheduling of course offerings |

We discovered through the process we went through this past year that there were some areas we thought were being covered well across the board in our Java programming classes (classes required for the Computer Science transfer degree).

Change in Teaching Technique: By evaluating students and comparing notes, we saw that one or two areas were indeed not getting through to the students. This was invaluable obviously to the instructors, as we could then talk about pedagogical approaches to mitigate that unexpected gap.

Curriculum Alignment: Also, through the process of identifying outcomes, we were able to see small discrepancies in individual instructor course content. This helped align all the instructors of the same subject to a more uniform approach.

Course Sequence Boundaries: Lastly, the process helped to precisely identify the handoff between first semester and second semester programming classes. There was some overlapping of topics between a couple of sections of the introduction course vs the starting point of the intermediate course. The process helped align all sections rather than having instructor freedom occasionally, but unintentionally, causing a confusing overlap for students.

3.3 What resources (time, professional development, curriculum approval process, etc.) did you need to carry out these improvements? Please explain.

There were numerous resources utilized for this process... mostly revolving around people's time.

The department initially spent time discussing the road forward involving a new SLO process. However, the small SLO team that was tasked with coming up with an approach going forward spent a larger amount of time to build and work through the new process.

This included faculty attending SLO workshops, faculty meeting with the Grossmont SLO coordinator, the creation of evaluation materials and approaches, evaluation, results gathering, and finally group review of both the results and the experience.

- 3.4 What evidence did you collect to demonstrate that the planned improvements were successful? If you have yet to assess the improvements, what evidence do you plan to collect?

As there were deficiencies in the expected results of the outcomes evaluations, we anticipate comparing future results (after corrections have been made) against those collected before the corrections. We hope to see a closing of the gap of what's expected vs what is shown regarding student learning outcomes.

We still need to come up with actual expected quantification of what "success" means in closing that gap. We need to identify what measured improvement would meet our expectations for our courses. We will not simply look at the results, see any amount of statistical improvement, and declare victory; we will instead come up with a statistical goal BEFORE assessing our improvements that we listed above so as not to fall into the trap of a subjective conclusion.

- 3.5 How will you use this evidence to ensure ongoing course/course sequence/program improvements are sustained?

If the evidence supports a positive conclusion regarding the success of our improvements, then we will know that our various approaches can be continued and solidified as a department-wide approach.

Reflecting the earlier comments in section 3.1... that was our goal with our new SLO efforts. We want to establish an ongoing, year-after-year approach that continuously takes us through the SLO cycle outlined above. We know that SLOs should be an ongoing effort, and we know that we have not been effectively integrating that effort into our standard operating procedures.

Most importantly, we hope these efforts will make the process not an extra task layered on top of everything else we do, but instead we hope to make the SLO process an integral part of that which makes us better at what we do and better at meeting the goals we have established for our students.

SECTION 4 - FACILITIES AND SCHEDULING

4.1 List the type of facility spaces your department/program utilizes for instruction. This can include on-campus, off-campus, and virtual.

"We have been seriously challenged in regard to equity in our online courses with the ballooning of a class student count going from 30 to 50. Students who are challenged either through language barriers, learning disabilities, or socioeconomic challenges require more online attention and guidance, but this effort to make a course educationally equitable for all students is severely strained if not impossible with the sheer volume of teacher-student touch points."

Computer labs and Canvas.

Perhaps CSIS department's greatest demand for services is requested of the college/district Information Technology/Systems technical team. Because CSIS maintains five (5) classroom computer labs with about 146 computers, we require IT technical support prior to the beginning of each semester and periodically throughout the semester as issues arise, new software updates arrive, hardware issues arise, and network issues surface, etc. In addition, faculty office and laptop computers often need similar support prior to and during any given semester. Their role is extremely critical to our mission and for strong student success.

CSIS Department makes full use of the other support services offered throughout the campus. Most faculty members have a referral statement in their syllabus reminding students to access the LTRC and make full use of the computer resources there to complete assigned activities and access additional information on instructor web pages and the internet. We also work closely with the tutoring center whenever possible to employ CSIS tutors whose availability is announced in class and posted throughout the appropriate classrooms. We have also worked with the English Reading Center by referring students to the center should they need assistance with English. In classes where papers are required, students are strongly encouraged to seek guidance from the English Writing Center on campus.

A constant theme across all of our courses is the faculty recommendation to students to seek help early and often from the available resources on campus.

4.2 Are the spaces listed in 4.1 adequate to meet the program's educational objectives?

Yes No

- o If you checked 'yes', please explain how your department/program utilizes facility space so your department can meet its educational objectives. Please provide an explanation of specific facility requirements of your program, and how those requirements are being met.
- o If you checked 'no', please explain how your department/program is not meeting its facility space needs to adequately meet its educational objectives. Please provide an explanation of specific facility requirements of your program, and how those requirements are not being met.

CSIS faculty, being technology individuals, make good use of technology to both enhance teaching and learning as well as to communicate with students to increase student success.

The CSIS use of technology often starts before students even set foot into the real or virtual classroom. Many of us make use of the contact information provided on WebAdvisor to send out a mass email to registered students preparing them in advance for their upcoming class. This may include the syllabus, recommended textbook(s) to purchase, along with other helpful information. We then continue this use of technology throughout the semester utilizing instructor webpages (which are often updated with new information on a weekly basis), emails, and/or Canvas Announcements, etc. The department's full and adjunct faculty are encouraged to be accessible via email every day. Many faculty often respond to students within moments of receiving email.

Most importantly from a student perspective, most of the department now securely posts grades or scores/points online (Canvas or other resource) in real time so that students have constant up to date information and can always be aware of where they stand in our courses.

Our department's web page(s) is also useful to assist students with department/curriculum information.

With respect to "How do students respond to the use of technology?", as was pointed out in detail in our response to Section 4.5, our CSIS students found both the Tech Mall and our CSIS Computer Labs/Classrooms to be very beneficial to them for their success in CSIS course(s). Every one of our CSIS courses has a hands-on computer component (lab) associated with it making the use of technology essential for successful completion of the course. They also rated access to and response from instructors highly beneficial to their success.

4.3 What proactive steps have you taken with regards to facility and scheduling to improve the ability of your department to meet the educational objectives of your program and ensure that students can complete their program in a timely manner?

CSIS has scheduling "control" over five (5) computer classrooms throughout this review period. This is essential for our continued success as a department that offers high quality, relevant computer-based courses/curriculum that afford students to be successful in pursuing their academic interests whether they be first-time preparation for a career, renewal or upgrade of their existing career, or transferrable to four-year institutions.

Currently the CSIS department labs are being used by various academic and student services departments. This process is being conducted on availability by the use of the facility request process. This allows academic departments which need the use of computers for instructional purposes to use the labs for teaching, internet research and projects.

With the administration's approval to add additional sections of courses or new courses in the past two years, we are finding that our scheduling is approaching maximum utilization counting our "open lab" times as well. We are excited that the 55-500 classroom building is on the list for replacement in the coming years and when this occurs, we intend to make our facility requirements known throughout the planning cycle for the replacement building.

CSIS also would prefer a larger “reserved” section of computers in the Tech Mall for our CSIS students. These computers have the necessary software installed on them for our courses whereas the basic tech mall computers do not.

4.4 Identify and explain additional needed technological and equipment resources that could further enhance student learning in these spaces.

To further enhance student learning or to just keep pace with the current state of the art technologies that students should learn about and become proficient with, CSIS faculty need to have access to more technical devices, not just Windows-based personal computers and laptops (which we greatly appreciate having). Devices such as Android mobile devices (tablets and Smart Phones) along with Apple mobile devices (iPad, iPhone) need to be issued to CSIS faculty who need to incorporate these devices into various courses. It is rather embarrassing for CSIS faculty to have students teach them about the technologies that they should already be familiar with simply because CSIS does not have the financial resources to provide our faculty with the devices or our district IS service group refuses to allow us to have them because of their inability (for whatever reason) to fully support such devices.

There is a constant need for our CSIS computer labs/classrooms to be outfitted with the latest hardware, software, and networking technologies available. Again, it is embarrassing to have students having newer technologies than do the faculty.

Finally, there is a very strong world-wide IT industry movement to “cloud” computing and CSIS has yet to research and evaluate this strategy due to push-back from the district IS staff citing lack of security, budget, and support.

4.5 Are students trying to access your program impacted by the facility spaces listed in 4.1?
Yes___ No_X__

- o If you checked ‘yes’, please explain how students are being negatively impacted by unmet facility needs experienced in your department/program. Please provide some specific examples.
- o If you checked ‘no’, please explain how your department/program is actively managing its facility space needs to meet its educational objectives and provide student access to your program. Please provide some specific examples. (See above, starting with 4.0)

4.6 If applicable, please include any additional information you feel is important regarding facilities and scheduling that was not included above including non-classroom spaces such as offices, storage, preparation areas, open workspaces for students/tutoring, etc.

SECTION 5 – STUDENT EQUITY AND SUCCESS

NOTE: See Appendix 2 for enrollment data; Appendix 3 for student success data.

5.1 What are the identifiable patterns with regards to overall trends in enrollments in your department? Explain what is causing these trends (e.g. campus conditions, department practices). Once you have identified and explained your enrollment patterns, then address what your department has done/is doing to address identified issues. Examples of any changes you made to manage enrollment are encouraged.

In addition, you should examine your enrollment data, disaggregated by gender, age and ethnicity. For any of these student groups in your department with enrollment data at lower or higher proportions than college-wide numbers, describe what factors you think is causing these patterns [Data and a summary of notable patterns will be provided by the Program Review Data Liaison].

To begin with, the past many semester's Professional Development Weeks have offered staff development activities that include instruction in learning styles, course delivery, and cultural and age diversity. Many of our faculty have availed themselves of these activities in order that these principles become integral to developing, implementing, and delivering both online and in class curriculum.

During this Review Period our CSIS full-time faculty gender ratio has changed from 66% male to 80% male due to a sudden death of one of our full-time female instructors and not being able to replace this faculty position since then. It was not our intent to increase the male ratio but it just happened. Historically, across the entire United States, Computer Science and Information Systems programs average about 80% male students to 20% female. According to the Gender data graphs in Appendix 10, approximately 68% of our students were male during the review period and 32% were female, regardless of fall or spring semester. Based on these percentages we believe we are successful in our current approach to attracting female students, even beyond the U.S. norms. Our CSIS male/female ratios are a bit different than Grossmont College as a whole which has an average of 57% females and 43% males. We believe the difference for CSIS versus Grossmont College is understandable as our percentages are more in line with Computer Science percentages across the nation.

The average age of our full-time faculty is well over 50 while the average age of our adjuncts is in the 40's. We do not believe that there is any significant correlation between the advancing age of our faculty and the age groups of our students. During the review period we found that our age group percentages were almost identical from fall to spring semester. Those percentages are approximately 22% (age 19 or less), 40% (age 20-24), 16% (age 25-29), 18% (age 30-49), and 4% (age 50+). Our CSIS percentages compare favorably with Grossmont College percentages with about the same percentage (within 1% to 2%) excepting for "Age 19 or less" (30% for the College), and "Age 20-24" (37% for the College). We don't have any concrete evidence why these two categories have the variance that they do.

With respect to ethnicity, all five of our full-time faculty are classified as white-Non

Hispanic. There is some ethnic diversity within our adjunct faculty ranks as we have faculty that represent the Asian, African-American, Hispanic, and White-Non Hispanic ethnicities. Not being allowed to hire any full-time faculty during the review period has prevented CSIS from changing the ethnicity of the full-time faculty, however, we have hired adjuncts during the review period and those hires have impacted the ethnicity of that group of faculty. Our percentages of the four (4) largest ethnic groups mentioned in the instructions above remain almost identical between fall and spring semesters.

Those percentages are 49% (White-Non Hispanic), 12% (Asian), 6% (African-American), 17% (Hispanic), and 16% (all other or non-reported). These percentages are fairly consistent with Computer Science ethnicity percentages across the United States. It is interesting to note that the number of African-Americans that pursue Computer Science degrees averages less than 10% nationwide. Comparing our CSIS Ethnicity percentages with those of Grossmont College, we find that the college has an average of only 46% (White-Non Hispanic) compared to our 49%; College Asian is 7% to our 12%; and College Hispanic is 23% compared to our 17%. African-American and Other are essentially the same. Anecdotally, nationwide the percent of Asians in Computer Science programs is generally higher which may account for our CSIS percentage being higher than the college's for Asian ethnicity.

Turning to the **Appendix 10** graphs that represent **Success/Retention**, we observe similar percentages between males and females – 60.6% and 63.2% “Success”, 14.7% and 11.5% “Not Success”, and 24.7% and 25.3% “Withdrawal” respectively. The Female Success and Not Success percentages appear to be more favorable but we must keep in mind that less than 35% of our students are female. Withdrawal percentages (about 25%) are unexplainable due to no further information being provided to us. Anecdotally, students that withdraw tend to over-extend themselves, take classes they do not have the recommended/required prerequisites for, or have changes in their personal life that impact the course(s) they are enrolled in.

Looking at the five (5) graphs in Appendix 10 that represent **Success/Retention by Age Group**, we conclude that in general there are no statistically significant differences between the different age groups with respect to “Success”, “Not Success”, and “Withdrawal”. The percentages appear, in general, to parallel the ones for male and female.

Looking at the nine (9) graphs in Appendix 10 that represent **Success/Retention by Ethnicity**, we conclude that, in general, Asian and White-Non Hispanic have similar percentages as do males and females. We observe some variation when we look at both African-American and Hispanics. In general, African-Americans have about a 45% Success rate and Hispanics have about a 55% Success rate. These lower success rates could be attributed to our void in full-time faculty representing these ethnic groups. Once again, administration will not allow us to add any full-time faculty so we have no way to address this with full-time faculty ethnicity ratios.

In summary for this item, CSIS believes that we are doing well with respect to all special populations, and acknowledge that we are willing to enact any strategies that the administration or other academic departments have promoted that have been proven to better meet the needs of these special populations.

5.2 Discuss trends in student success and retention overall in your department and explain these trends (e.g. campus conditions, department practices). Also examine the success and retention data disaggregated by gender, age and ethnicity. For any groups that have success

rates in your department at lower or higher than college-wide describe what factors you think cause those patterns. Provide examples of any changes you made to improve student success/retention, especially for groups that have equity gaps. [Data and a summary of notable patterns will be provided by the Program Review Data Liaison]

Perhaps one of the CSIS's most visible (across the campus) activities to encourage students to be actively engaged in the learning process is our Computer Gaming Club led by Instructor Joe Shoopack. Members of the club engage in club challenges periodically in Griffin Gate as well as participated during a recent campus Open House.

Another CSIS activity that assists our students so they can be actively engaged is our use of student lab tutors. Each day of the week we have several hours of "open lab" time in our computer classrooms and each of these lab times is monitored by one or more student lab tutors who are there to assist students who ask for help to better understand homework and project assignments. The lab tutors are not allowed to do the work for the student, nor are they allowed to tell the student exactly how to do it (the steps to complete the assignment). They can remind students about textbook and/or lab book content that might be helpful as well as give general guidance that could allow the student to better remember and think about solving the problem on his/her own. CSIS has been using lab tutors very successfully for many years.

Some CSIS instructors hold "office hours" (or portions of them) in our computer classrooms (instead of in their faculty office) so that they can also assist the students with whatever homework or projects they are working on.

Several of our CSIS courses are of the hybrid format and those instructors typically utilize the "flipped" classroom technique during their classroom meeting time(s) each week. Students prepare ahead of class (a novel idea!) and then bring their questions and issues with them to the class meeting time. There the instructor (and possibly other students) can engage the student and help him/her address his/her specific needs and challenges. In this "flipped" classroom environment, often instructors will utilize students who understand what is required and allow them to assist other students while the instructor is helping other students. Again, students are not allowed to do the work for other students nor tell them how to solve the problem(s) they are facing. We have found this model to be very beneficial as a typical faculty to student ratio of 1:20 or more really needs additional tutors otherwise students come to class and wait around for the instructor. To be clear, students do NOT help other students with graded assessments of any type; only the instructor is allowed to consider doing this.

CSIS Instructors who are currently teaching an online and either a hybrid or a classroom section of the same class often will invite online students to attend any of the classroom meetings on a space available basis that will not exceed fire marshal requirements.

CSIS students have the entire World Wide Web at their disposal to seek out tutorials and videos that could help them with the content they are focusing on throughout the course. This resource has become invaluable to many of our students and to many of our instructors to point out as reference material.

One final activity should be mentioned here because it is perhaps our biggest transformation that CSIS has taken during this review period to help promote students to be more actively engaged in

their courses. Our CSIS-110 Principles of Information Systems course enrolls close to 700 students each academic year. This course is articulated with SDSU's MIS-180 course, a course which is required of all SDSU College of Business students (several thousand each year). During this review period we have migrated from a hard-copy textbook and a hard-copy lab book with lab assignments in it to e-books for both the textbook and the lab book. In addition, the elab book includes self-paced tutorials for students to move at their own pace through the lab material. Our first full academic year of using the "e" approach was 2013-2014 and was not without its technical and administrative challenges. Nonetheless, the students appeared to be more fully engaged with both the textbook content as well as the lab content. Feedback was overwhelmingly positive from the students and we are now in our second full academic year of utilizing the electronic content/lab material strategy.

5.3 Describe specific examples of departmental or individual efforts, including instructional innovations and/or special projects, aimed at encouraging students to become actively engaged in the learning process in their classes.

Informally the CSIS department is in contact with many other departments socially; we also have developed relationships more formally through committee work and on staff development trips. Building these relationships has allowed us to enhance student learning in a number of ways. We have several cross-listed learning community courses, including links with BOT and Business.

As was mentioned above, CSIS's most visible (across the campus) activity is our Computer Gaming Club led by Instructor Joseph Shoopack. Members of the club engage in club challenges periodically in Griffin Gate as well as participated during a recent campus Open House. Our Computer Science Culb, led by Hau Nguyen is another exciting group that meets regularly.

In addition to the above, our CSIS computer classrooms in building 55, rooms 530 through 534 are used for both academic instruction for CSIS students as well as available ("open") lab times for CSIS students when classroom instruction is not in session in order to allow our students to have access to our computers and lab tutors who are there to give guidance and support help to them as they work on their coursework. These same rooms are also available for use by other academic departments throughout the semester as well as during the summer months. A few of the academic units that have taken advantage of this include AOJ, Business, Psychology, ESL, and Anthropology.

Our CSIS curriculum has several courses within it that are cross listed with courses from other academic units on campus. For example, CSIS-147 – Social Media and Internet Marketing is cross listed with BUS 147.

CSIS is just beginning discussions for an exciting "partnership" with National University to assist our students with their pursuit of a bachelor's degree after they finish at Grossmont College. The discussions are in the early, formative stages as we conclude this 6-year review period.

5.4 Explain how the program incorporates opportunities for student engagement outside of class time and/or in collaboration with other departments (e.g. interdisciplinary course offerings, learning communities, internships, research projects, service learning, or participation in community events, tournaments, competitions, and fairs) to enhance student learning.

As was mentioned above, CSIS’s most visible (across the campus) activity is our Computer Gaming Club led by Instructor Joseph Shoopack. Members of the club engage in club challenges periodically in Griffin Gate as well as participated during a recent campus Open House. Our Computer Science Culb, led by Hau Nguyen is another exciting group that meets regularly.

We believe our CSIS response to this Section is included in our response in Section 5.1. Grossmont College serves a diverse community and is committed to celebrating the diversity of our campus community both on ground and online. That commitment is woven into the fabric of our institution, and promotes acceptance, respect, and civility. Any doctrine that elevates one group above another has no place at Grossmont College. Furthermore, Grossmont College does not condone any language or actions that promotes racism, religious discrimination, anti-Semitism, homophobia, violence, bigotry, and other forms of hate. Finally, Grossmont College has an expressed commitment to equity and inclusion for students, faculty, and staff members who are lesbian, gay, bisexual, transgender, queer, questioning, intersex, and asexual. The district employs a Campus Liaison for LGBTQIA+ needs, offers LGBTQIA+ Safe Space training, and has multiple student scholarships for members and active allies of the LGBTQIA+ community.

5.5 If state or federal licensing/registration examinations govern the program, please provide data and comment on student success trends.

There are NO state or federal licensing/registration examinations that govern our CSIS program.

5.6 If your program offers a degree or certificate in the college catalog, explain the trends regarding number of students who earn these degrees and/or certificates, including any changes that you have made to increase awards. Insert the “Degrees and Certificates” data table in this section.

| Computer Science/Information Systems | Computer Programming | AS | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 |
|--------------------------------------|----------------------|-----|---------|---------|---------|---------|---------|
| | | COA | 3 | 4 | 5 | 6 | 10 |
| LAN Support Specialist | AS | 0 | 3 | 2 | 5 | 3 | 13 |
| | COA | 0 | 3 | 3 | 4 | 3 | 13 |
| Small Computer Specialist | AS | 0 | 1 | 2 | 0 | 1 | 4 |
| | COA | 1 | 1 | 2 | 0 | 1 | 5 |
| Web Design | AS | 4 | 2 | 1 | 2 | 5 | 14 |
| | COA | 4 | 2 | 2 | 4 | 8 | 20 |
| Web Development | AS | 0 | 0 | 0 | 0 | 0 | 0 |

As shown above, CSIS degree and certificate counts have ranged from a low of 7 degrees and 9 certificates in 2014/15 to a high of 19 degrees and 22 certificates in 2018/19. There is a more than doubling increase in both degrees and certificates from the start of this review period to its end, but the increase is still not that impressive. The number of both degrees and certificates should grow substantially over the next year or two, as we added three brand new degrees which are already very popular. These low numbers are also expected and anticipated as a result of the career fields within the department. Careers within the CSIS discipline usually, but not always, require a minimum of a bachelor’s degree thus most students do not focus on obtaining an associate degree from Grossmont College while attending CSIS courses. Instead CSIS remains primarily a transfer department or career change/upgrade, and our department goals focus on meeting the needs of these diverse student populations.

5.7 If you have any information on what students who major in your department go on to achieve after they leave Grossmont, please share that with us. For example, where do they transfer and do they graduate on time? What careers do they pursue? What are starting salaries in the field? Do you know if they go on to employment in their field and professional success? What impact did Grossmont have on their lives?

We do not track students after they graduate from our program.

SECTION 6 - STUDENT SUPPORT AND CAMPUS RESOURCES

PURPOSE OF SECTION 6: *To determine how departments utilize various campus services.*

6.1 Are the college's student support services (Tutoring, Counseling, Health Center, Library, Financial Aid) adequate to meet your student's needs? Please elaborate on your answer.

The college's student support services are somewhat adequate to meet student's needs. There are some embedded tutors in some CSIS courses, but there should also be embedded tutors available for programming courses. There also should be an option for online tutoring for all CSIS courses.

CSIS Department makes full use of the other support services offered throughout the campus. Most faculty members have a referral statement in their syllabus reminding students to access the LTRC and make full use of the computer resources there to complete assigned activities and access additional information on instructor web pages and the internet. We also work closely with the tutoring center whenever possible to employ CSIS tutors whose availability is announced in class and posted throughout the appropriate classrooms. We have also worked with the English Reading Center by referring students to the center should they need assistance with English. In classes where papers are required, students are strongly encouraged to seek guidance from the English Writing Center on campus.

A constant theme across all of our courses is the faculty recommendation to students to seek help early and often from the available resources on campus.

6.2 What services do students in your department/program use most often or that make the most difference? Can you provide any examples where services have clearly improved student retention and success?

The open lab CSIS tutoring service is used most often by students and it makes a significant difference in student learning. For example, when students are struggling with assignments, the open lab CSIS tutoring service provides one-on-one tutoring to help students solve problems. Students have mentioned that the tutoring service is invaluable in keeping them in school and helping them to succeed.

- 6.3 Are college support services adequately supporting your faculty and staff? Consider the following support services: IT, Instructional Operations, Business Services, Printing, Bookstore, Maintenance, CAPS, and any other support services important to your faculty and staff.

The college support services are adequately supporting our faculty and staff.

A beneficial service for our students is the DSPS Center; our faculty communicate through email and direct interactions (phone & face-to-face) with DSPS staff in order to effectively facilitate student test taking and other necessary accommodations to ensure student success.

Perhaps the CSIS department's greatest demand for services is requested of the college/district Information Technology/Systems technical team. Because CSIS maintains five (5) classroom computer labs with about 146 computers, we require IT technical support prior to the beginning of each semester and periodically throughout the semester as issues arise, new software updates arrive, hardware issues arise, and network issues surface, etc. In addition, faculty office and laptop computers often need similar support prior to and during any given semester. Their role is extremely critical to our mission and for strong student success.

SECTION 7 – ON-CAMPUS/OFF-CAMPUS INVOLVEMENT

PURPOSE OF SECTION 7: *The purpose of this section is for your department to showcase the most meaningful outreach, engagement and retention work that you do, both on and off campus. We are interested in learning what the faculty and staff in your department do maintain/enhance their status as professionals in their field and as instructors, how you represent the college in the community/region, interact with other departments around campus, serve the college and your students, and participate in campus life.*

The first table you see in this section is INFORMATIONAL ONLY, so you can understand what type of information you should be providing for this section. The second table you will see is the suggested table format you should use to display your information for this section.

TABLE ONE: INFORMATIONAL ONLY – PLEASE ADDRESS THE CONTENT IN THIS TABLE

| OFF CAMPUS | ON CAMPUS |
|---|---|
| Marketing Flyers, brochures, booths, radio | Marketing Flyers, brochures, booths, Summit newspaper |
| Discipline Specific activities Conferences, Clubs/Organizations, Department Events, Licensing Meetings, Technical Reviews/peer reviewing manuscripts/textbooks and other discipline-specific volunteer activities, regional and state task forces | Campus Volunteerism Involvement in college and other department's activities (campus open houses, science fair, water project, helping out as a theater usher or at a sports team event) |
| Community Involvement Advisory committees, serving in regional groups, K-12 outreach, Job Fairs, other college-related but not discipline-specific activities | Interdisciplinary Collaboration Collaborating on shared events, cross-listed courses, working with campus student services, linked courses (sharing of expertise/resources between departments to benefit student success, such as guest lectures, shared lab activities, simulation or other special events) |
| Professional Development Attendance, creation/presentation, grants, sabbaticals | Professional Development Workshop Attendance, creation/presentation of professional development activities, grant-writing and sabbatical projects |

Table two on the next page shows how you should organize your activity data. Complete this table with your commentary.

If you need assistance in creating a table, please contact the Program Review Chair. If you are using word, simply select 'insert' from the main menu, then table, and then select the number of columns and rows you want for your table.

TABLE TWO: SUGGESTED TABLE FORMAT

| Faculty | Activity/Committee | Year(s) | Value to Student Success |
|---------|--------------------|---------|--------------------------|
|---------|--------------------|---------|--------------------------|

| | | | |
|--|--|-----------|---|
| Hau Nguyen, Clif Quinn, Robert Gillespie, Jim Hotz | On-campus Booth Fairs – distributing flyers/brochures | 2017-2020 | Engage students to learn about the CSIS Department and available courses. |
| Hau Nguyen, Clif Quinn | Computer Science Organization | 2017-2020 | Promote student leadership and computer related student activities. |
| Hau Nguyen, Clif Quinn, Robert Gillespie | K-12 Outreach | 2017-2019 | Outreach to local schools to promote CSIS. |
| Clif Quinn, Janet Gelb, Robert Gillespie, Jim Hotz, Hau Nguyen | Attend conferences | 2017-2019 | Bring innovative ideas back to the classroom to promote success learning and success. |
| Clif Quinn, Janet Gelb, Robert Gillespie, Jim Hotz, Hau Nguyen | SD4C (San Diego Community College Computer Consortium) Regional Meetings with colleges and universities in San Diego region. | 2017-2019 | Bring new ideas and methods of teaching into the classroom. |
| Clif Quinn, Janet Gelb, Robert Gillespie, Jim Hotz, Hau Nguyen | Interaction with IT professionals locally as well as across the US and in other countries | 2017-2020 | New course ideas and curriculum development. |
| Clif Quinn, Janet Gelb, Robert Gillespie, Jim Hotz, Hau Nguyen | Participate in local chapters of national IT users groups | 2017-2020 | New course ideas and curriculum development. |

7.1 Referring to the above table, what activities contributed most to student success?

Each of these areas play a part in contribution to student success. Both the conferences and interaction with IT professionals play a large part in areas such as the drone conference Robert attended in San Francisco which was directly related to Android drone programming in the classroom benefitting students with up to date programming technologies. Hau has attended multiple conferences directly related to cybersecurity, and without those we would not have our new Cybersecurity Degree.

The SD4C (San Diego Community College Computer Consortium) Regional meetings have contributed the most to student success.

Over 20 years ago, the CSIS department recognized the problem inherent in all of the San Diego County community colleges in Region 10 developing advisory committees from a limited pool of industry representatives. There would not be enough industry personnel with enough time to

contribute to all community colleges. As a result, Grossmont and other community colleges, in cooperation with SDSU created the SD4C Advisory Consortium.

This is a group of Computer Information Systems, Computer Science and Business faculty from community colleges and universities throughout San Diego County. SD4C started in 1995 and one of the main focuses at that time was with the SDSU College of Business MIS faculty wanting to inform the community colleges of upcoming changes in their business and computer information systems offerings.

Janet Gelb and Jim Hotz joined the initial members from Mesa College, City College and SDSU (Ronald Norman was one of the SDSU SD4C founding professors back then and became a full-time instructor in our CSIS department - he is now retired adjunct) to discuss issues that might affect the student's ability to transfer to the four year universities. Each year this group has grown with all of the San Diego county community colleges and SDSU, USD, UCSD, CSU San Marcos, and National University having faculty representation today.

The SD4C Consortium meets twice a year near the end of each semester to discuss major issues of concern to all. Each gathering is held at a different campus based on a rotating volunteerism to host. This also provides each of us an opportunity to tour the facilities of other colleges and acquire ideas that may benefit our students. The discussions have expanded from curricula issues to student challenges, transfer issues, instructional issues, lab setups, equipment purchases and the collaborative hiring of faculty. These gatherings are very informative, interactive and exciting. All college faculty get an excellent chance to learn what is happening at other institutions, form bonds with colleagues, as well as establish collegial relationships. In our field of study, changes are occurring at such a rapid pace that this type of collegiality and discussion is a very welcome event.

Principal recommendations of the committee have typically dealt with the desirability, advisability, and/or problems associated with the introduction of different software and hardware packages. This together with industry requirements and recommendations, have been of most value as we plan our curriculum enhancements and revisions each academic year.

7.2 Please provide an overall reflection on your department's activity displayed in your table.

Overall, the CSIS department's activities displayed in the table is excellent. Faculty are very active both on-campus and off-campus to promote student success.

All of us realize that our discipline is a highly marketable discipline and networking with various "colleagues" is essential for staying current and relevant in our field as well as promoting our courses and programs to others who are influential.

7.3 Are your overall faculty professional development needs sufficient to ensure students are successful in your program?

Yes No

If no, please describe what faculty professional development needs are not being met.

SECTION 8 – FISCAL & HUMAN RESOURCES

PURPOSE OF SECTION 8: *To assess if the college is meeting the resource needs of your department and if your department is using those resources efficiently.*

NOTE: All required data tables and graphs will be compiled and delivered to you by the Program Review Data Liaison.

Fiscal Resources

| | FA14 | FA15 | FA16 | FA17 | FA18 |
|-------------------------|--------------|---------------|--------------|---------------|---------------|
| Earned Enroll | 927 | 899 | 915 | 972 | 1096 |
| Max Enroll | 1422 | 1562 | 1623 | 1598 | 1964 |
| % Fill | 65.2 | 57.6 | 56.4 | 60.8 | 55.8 |
| Earned WSCH | 4192.0 | 4022.7 | 4152.9 | 4574.6 | 5513.1 |
| Total FTEF | 10.3 | 10.0 | 13.1 | 13.5 | 13.9 |
| Earned WSCH/FTEF | 405.8 | 402.5 | 317.2 | 339.3 | 397.0 |
| | | | | | |
| | SP15 | SP16 | SP17 | SP18 | SP19 |
| Earned Enroll | 910 | 857 | 1010 | 1135 | 1229 |
| Max Enroll | 1465 | 1396 | 1825 | 2003 | 1978 |
| % Fill | 62.1 | 61.4 | 55.3 | 56.7 | 62.1 |
| Earned WSCH | 4329.5 | 4169.6 | 4950.7 | 5471.3 | 6103.9 |
| Total FTEF | 12.0 | 10.1 | 13.6 | 12.6 | 14.3 |
| Earned WSCH/FTEF | 360.2 | 412.2 | 364.0 | 433.1 | 425.9 |
| | | | | | |
| | SU14 | SU15 | SU16 | SU17 | SU18 |
| Earned Enroll | -- | 44 | 149 | 225 | 250 |
| Max Enroll | -- | 90 | 261 | 426 | 475 |
| % Fill | -- | 48.89 | 57.09 | 52.82 | 52.63 |
| Earned WSCH | -- | 112.80 | 172.54 | 747.63 | 1318.00 |
| Total FTEF | -- | 0.70 | 1.80 | 2.98 | 2.78 |
| Earned WSCH/FTEF | -- | 161.14 | 95.86 | 250.60 | 473.54 |

Refer to the Table provided that shows Enrollment, % Fill, Earned WSCH, FTEF and WSCH/FTEF to answer these questions. Data for Fall, Spring and Summer semesters are provided separately.

- 8.1 Describe any patterns in enrollment; maximum enrolment and % fill in the program since the last program review. What are typical section maximum sizes (capacity) for your courses and what dictates those caps? Have you changed the number of sections offered and/or section sizes in response to changes in demand? If so, what effect has it had?

Overall, we have seen a significant increase in total number of students in our department over the past few years. Let me answer the questions above by breaking out the response.

Section Sizes:

Over the past six years, all on-campus classes, both hybrid and 100% face-to-face, have had section sizes determined by the physical classroom size and capacity. For CSIS, we utilize five rooms, and the capacities are 24, 24, 28, 29 and 33 students. In regard to Online classes, for 5.5 of the past 6 years, we matched the intent of our AFT contract, and in general we did exactly what the contract specifies, where it says:

7.11.4.3.1.

2. Set general lecture and *online course maximums at fifty (50) students or at classroom maximum, whichever is lower*

For many years, we taught our online classes according to the intent of this contract which clearly says to set a similar capacity for similar classes. This has been interpreted differently this semester of Spring 2020, and now all the online classes are being set with a class capacity of 50 students. This has been very difficult for caring and skilled faculty who have spent many years of spending significant one-to-one time with each student. This was already time-consuming with a class of 24, 30, 35, etc and helping each student understand line-by-line with their computer code what was incorrect, how to improve, etc, and then to literally have their student numbers double from one semester to the next, well, not easy.

- 8.2 Describe and explain any patterns in Earned WSCH, FTEF and Earned WSCH/FTEF since the last program review. Please explain changes in FTEF due to changes in faculty staffing levels. For courses/sections with low Earned WSCH/FTEF explain their importance in the program and measures the department/program has taken/plans to take to improve efficiency and/or balance low and high efficiency offerings and/or maximize course % fill.

If one looks closely at CSIS over the last six years, you will see a steady growth in the number of students who have been attending CSIS classes. The most significant increases have been during the past few semesters, due to us adding the new Cybersecurity program as well as our Computer Science Associate Degree for Transfer. These two programs have attracted many new students.

- 8.3. For money that you get from the college and/or from Perkins funds as part of your budget, is this amount adequate? What is this money used for to operate your department? If it is not adequate, please explain how additional funds would be used to improve student learning and success.

For the most part, we are sufficiently funded. We do not waste money and our funds are indeed used up at the end of almost each year.

Some of the items we need to fund include our full-time lab manager as well as approximately nine lab aides/tutors. We also purchase new computers every five years for the five computer labs we

operate. We have a small budget for Conferences and Training, approximately \$2,000 per year and we purchase supplies for the computer labs, a large portion of which goes to new licenses for updated software. For CSIS, we have lots of software needs, including many programs for the classes, such as Java, Microsoft Office, Adobe products, Video Gaming Programming, and many more.

We anticipate a need in the near future for additional funds for the tutors because the minimum wage has increased, and we are also a growing department. There will likely be a need for an increase in the number of tutors in the future.

PURPOSE OF SECTION 8.4: The committee is looking to recognize program/department efforts for outside funding.

8. 4 If your program has received any financial support or subsidy outside of the college budget process (grants, awards, donations), explain where these funds are from, how they are used, and any other relevant information such as whether they are on-going or one-time.

I will defer the answer to this to our Dean, Javier Ayala. We receive a portion of our funds through the VATEA process, and others through the Perkins grants, and at times some funds are made available through other grants, but where it all comes from is still better understood by our Dean.

Human Resources

| | FA14 | FA15 | FA16 | FA17 | FA18 |
|------------------|--------------|--------------|--------------|--------------|--------------|
| FT Faculty Count | 5 | 7 | 6 | 7 | 6 |
| PT Faculty Count | 25 | 20 | 29 | 27 | 26 |
| Full-Time FTEF | 3.30 | 4.43 | 2.45 | 3.54 | 3.51 |
| X-Pay FTEF | 0.00 | 0.00 | 0.00 | 0.35 | 0.80 |
| Part-Time FTEF | 7.03 | 5.56 | 10.64 | 9.59 | 9.58 |
| Total FTEF | 10.33 | 9.99 | 13.09 | 13.48 | 13.89 |
| FT Percent | 31.9% | 44.4% | 18.7% | 28.9% | 31.0% |
| Permanent RT | 0.538 | 0.401 | 0.668 | 0.668 | 0.668 |
| Temporary RT | 0.95 | 1.12 | 1.25 | 1.00 | 1.25 |

NOTE: Please refer to the table provided by the Program Review Data Liaison to answer the following questions.

PURPOSE OF SECTION 8.5 & 8.6: The committee is interested in knowing about the people in your department and what they do. The committee also wants to understand your department/programs staffing needs.

8.5 Describe the roles and responsibilities of full-time versus part-time faculty in your department. If any trends or changes are apparent in the past six years, please explain the reasons for them.

Full time faculty meet and discuss items such as scheduling, which classes to offer, and we discuss curriculum issues, such as which programs to add, which programs or specific classes to delete, and so on. All of us work with the part-time faculty in many ways as it is often the case that the particular

adjunct faculty member may have a better feel or knowledge level on the real-world usage of software or trends.

In regard to trends, so far we have been able to attract and generally retain excellent adjunct faculty. It can be hard, as in many departments, to staff the daytime classes with top talent, but that is to be expected.

As a reminder, we feel we truly have a very good group of adjunct staff. Many have been with us over ten or twenty years, they are comfortable with the college and the department, we socialize together, they are encouraged to attend a department potluck each Flex Week and they are all invited to an end-of-semester party each year (or semester) at the Department Chair's home. This has been a wonderful way for us to become much closer personally as well as professionally.

8.6 Are the current levels of staffing of faculty adequate? Discuss part-time vs. full-time ratios and issues surrounding the availability of part-time instructors as well as duties and responsibilities of full-time faculty members that influence their loads (such as reassigned time and use of overload).

~~As of March, 2020, we should have adequate staff numbers if we are successful in our New Hire process which is occurring this Spring 2020.~~ RECENT UPDATE: Our new hire has been suspended, darn! One challenge we have had in CSIS is that one of our full time faculty has been re-assigned 100% as the campus Distance Education Coordinator for several years. This has left us effectively with four full time teaching faculty.

We have been given the go-ahead to hire one more full-time faculty this semester to start in Fall 2020, and that should put us at an adequate level of six full time faculty. As of today, March 2020, I fully believe that we will have at least two, if not three retirements by May 2021. By Spring next year, it would be very nice to be able to hire at least one more new full-time faculty, but we will apply for that this Fall, 2020.

8.7 If staffing levels are not adequate, give a justification of your request for increased Full Time faculty based on how this position would contribute to basic department function and/or the success, retention and engagement of students in the program.

~~As of March 2020, we should have adequate staff numbers if we are successful in our New Hire process which is occurring this Spring 2020.~~ RECENT UPDATE: Our new hire has been suspended, darn!!

8.8 In the table below, list non-faculty positions that are responsible to your program (by title rather than by individual name). This list should include classified staff as well as work study and student workers.

Indicate the FTE/hours and where funding comes from for these positions. Add or delete rows to the table as needed. If you have questions on how to complete this table, please contact the Program Review Committee Chair.

The amounts for .625 and .5 allow "up to" those amounts, typically at 25 and 20 hours per week, but only two of the lab aides actually work at that amount.

| Position | Funding | FTE/Hours |
|----------|---------|-----------|
|----------|---------|-----------|

| | | YR 1 | YR 2 | YR 3 | YR 4 | YR 5 | YR 6 |
|-----------------------|-----------------------|------|------|------|------|------|------|
| computer lab tech III | | 1 | 1 | 1 | 1 | 1 | 1 |
| Nance Tutor | For all | .5 | .5 | .5 | .5 | .5 | .5 |
| Nance Tutor | of these | .625 | .625 | .625 | .625 | .625 | .625 |
| Nance Tutor | positions | .625 | .625 | .625 | .625 | .625 | .625 |
| Nance Tutor | we first | .625 | .625 | .625 | .625 | .625 | .625 |
| Nance Tutor | use VATEA | .625 | .625 | .625 | .625 | .625 | .625 |
| Nance Tutor | funds and | .625 | .625 | .625 | .625 | .625 | .625 |
| Nance Tutor | then when | .625 | .625 | .625 | .625 | .625 | .625 |
| Nance Tutor | those are finished we | .625 | .625 | .625 | .625 | .625 | .625 |
| Lab Greeter | use Perkins | | | | | | .5 |
| Lab Greeter | funds. | | | | | | .5 |

8.8 Briefly describe the duties for each position. Include a discussion of any changes in terms of non-faculty staffing and describe the impact on basic department function and/or the success of students in the program. Are current staffing levels adequate in non-faculty positions? If not, give a justification of your request for increased resources.

“Nance” tutors help students with their CSIS homework in an open lab setting. Other duties are making sure the computer lab is clean, helping students with lab, software and homework questions and they also have the ability to report back issues to both the computer lab supervisor as well as the faculty. Lab ‘Greeters’ help connect the students to the tutors and make the students feel welcomed. Lab greeters can answer simple student questions which can help tutors have more time to help with the difficult homework problems.

SECTION 9 – SUMMARY AND RECOMMENDATIONS

PURPOSE OF SECTION 9: *The purpose of this section is to demonstrate how your department/programs ties in to the college's 2017 – 2022 Strategic Plan targeted goals of Outreach, Engagement and Retention.*

- 9.1 Summarize program strengths in terms of:
 - Outreach
 - Engagement
 - Retention
- 9.2 Summarize program weaknesses in terms of:
 - Outreach
 - Engagement
 - Retention
- 9.3 Describe any concerns that may affect the program before the next review cycle such as retirements, decreases/increases in full or part time instructors, addition of new programs, external changes, funding issues etc.
- 9.4 Make a rank ordered list of program recommendations for the next six-year cycle based on the College's new Strategic Plan which includes outreach, engagement, and retention.

9.1 and 9.2 - Strengths and Weaknesses

From Section 1.1, the CSIS department's Vision and Mission Statements are:

Vision Statement: Students in the Grossmont College CSIS Department shall have access to high quality technology-based instruction in the use of computers for the purposes of academic transfer, career enhancement, and/or personal development.

Mission Statement: The Grossmont College CSIS Department will provide quality education to students based on a comprehensive, relevant curriculum that provides students with the ability to transfer, enter the workforce, and/or promote life-long learning.

Since first establishing the above Vision and Mission statements in April of 2006, the CSIS department faculty has been committed to those statements as the basis for all that is done within the department.

The CSIS department continues to maintain a long-standing history of academic excellence that values hard work and academic integrity. The department provides outstanding, transfer-level and continuing education through lecture and lab-based instruction (via face-to-face, hybrid, and online) to its students. Our success (which translates to student success) in these programs is possible because of a shared commitment to high standards, meaningful and challenging curricula, maximum student contact, intradepartmental harmony, and enthusiasm for our respective areas of emphasis within the CSIS department.

Faculty members in the department continue to develop and maintain innovative methods of instruction, such as the “flipped classroom” strategy, to ensure increased access and success for all students. With a high number of students taking multiple courses throughout the department we are also able to concentrate our efforts on those students who are especially dedicated and interested, often helping to directly place them into internship and/or “foot-in-the-door” entry level employment opportunities.

The CSIS full-time and adjunct faculty also have an impact beyond our department, working closely with colleagues from across campus, students in Grossmont’s Middle-College, government agencies, non-profit organizations, and the equivalent departments at area community colleges as well as four-year universities to promote collegiality and maintain community contacts.

One of our core, long-standing strengths is our faculty’s ability to anticipate and assimilate the rapid-paced dynamics of information technology into our labs and courses. We have an excellent amount of current industry experience among both our full time and adjunct faculty.

A weakness related to the above strength is that of the administration placing what we believe to be artificial “minimum seat counts” on course sections evenly applied across the entire campus. When we are creating a new course, we will often not achieve that minimum “seat count” simply due to limited number of students. As a result, we have not been able to offer new courses during this review period. We believe the administration should allow one or two semesters to “seed” the course with students who will then spread the word about the new course, subsequently meeting the minimum seat count.

A follow-on weakness to the above strength is the rapidly approaching retirement of three (3) of our five (5) full-time faculty members. One may retire as early as Fall 2020, with two more following within one to two years. This will create a huge knowledge gap in our department unless new full-time hires can be accomplished now.

Another CSIS strength is our ability, with campus budget, to reinvent our classroom labs (about 100 PCs) every three years with the latest hardware, networking, and software upgrades. Without the expertise of our CSIS Lab Manager, Martin Phillip, along with support from Instructional Computer Services (ICS), we would not be able to accomplish this. These labs are critical to our student’s success and we are also grateful that a few of the Tech Mall computers are equipped to match our computer labs so our students can use them during their study times.

A weakness related to the above strength would be the continual “buffeting” from the district IT department which is rarely, if ever, up to date for supporting the latest (or close to latest) hardware and software. Some recent examples include Windows 7 and the migration to Windows 10. CSIS should be close to the leading edge with technology whether the rest of the campus is or not. This concerns us greatly.

A strength for our continued student success is our flexibility to offer multiple sections of our most demanded courses in a variety of formats including classroom, hybrid, and 100% online. Our faculty are well-trained to handle any of these diverse formats as well as being prepared and already utilizing the “flipped” classroom strategy to facilitate even greater student success.

The weakness with the above strength is just a fact of life – different formats require different preparation, delivery, and execution so an instructor who has more than one of these formats for the same course basically has to prepare different course materials. As you can imagine, this takes additional time on the part of the instructor.

As of Spring 2020, a big challenge for CSIS online faculty is the new requirement to allow up to fifty (50) students per class! For us, this is brand new as of this semester. In the past, we always were allowed to honor the intent of our AFT contract which states, pretty clearly that an online class course maximum should match the on-campus class.

7.11.4.3.1.

1. **Set general lecture and online course maximums at fifty (50) students or at classroom maximum, whichever is lower.**

All of our computer labs on-campus have course maximums of 24 – 33 students. This is why we are very frustrated with having to put up to fifty students in a class. Some adjunct faculty simply quit and the others are struggling with trying to determine whether to just teach less, assign less, grade half the tasks, or some combination. Here at Grossmont our mission and ‘words’ say we are all about “success”, “equity”, and so forth, yet we put fifty students into a Java Programming, Web Development, or C++ Programming course, where the instructor is supposed to look line-by-line at the computer code, try to determine the problems, try to help the student learn what they did wrong or could do better. We literally double the number of students in the class. We realize we need to negotiate for that in the next upcoming round of negotiations, but it has been very demoralizing and frustrating all around.

Another strength for our CSIS department is our complete “buy in” to the Student Learning Objectives (SLO) campaign that began about the same time as the beginning of this review period. Each of our full-time instructors has participated in SLO workshops and has contributed to the assignment of SLOs for every course within our curriculum. In addition to getting the SLOs established, faculty have also assessed SLOs in many of the courses and reported the outcomes, most of which have been favorable/successful for the student.

9.3 Describe any concerns that have affected or that you anticipate affecting the program before the next review cycle. These may include items such as increases or decreases in number of full-time and adjunct faculty, sections offered, and growth or decline of the program.

Our basic concerns were identified in Section 1.1 however we will re-state those here.

Our student enrollment appears to be gradually returning to levels last seen just past the turn of the century. Will we be able to meet student demand? We would like to think so.

Perhaps the greatest concern for our department is that of upcoming retirements for three of our five full-time faculty members. These retirements could commence as early as 2020 for one faculty member and the other two potential retirements could take place by 2021. This will leave a huge knowledge gap in our department if we are not allowed to hire replacement(s) soon.

An ongoing challenge is to continue to identify and attract highly skilled adjunct faculty who are on the cutting edge of the new technologies we are constantly addressing. There is competition for these folks among the colleges in San Diego County as well as a need to offer attractive remuneration and benefit incentives. The AFT Union is working to address these needs, and we expect to be able to attract more highly skilled instructors who are presently working in the CSIS industry.

An ongoing concern is having significant budget each year to keep both our computer classroom hardware (146 PCs) and software as close to state-of-the-art as possible. Along with this concern is another which allows our full time faculty to have their office and/or portable hardware/software at state-of-the-art so they can be evaluating, researching, and testing new hardware and/or software for potential introduction into our curricula.

Another of our concerns will be the transition period of time which might occur during the next review cycle related to the demolition of our faculty offices and classrooms in buildings 54 and 55 along with the construction of a replacement (set of) building(s) – Proposition V money. We will need to be able to duplicate and improve on what we already have so as to not disrupt the continuity and flow of our courses and labs during this transition period which could span several years. Student success will be negatively impacted if this transition period and associated re-location of facilities is not handled with the utmost expert and professional care.

Another concern related to the above one will be the strong desire and need for our department's collective "voice" be heard with respect to the new construction and facilities it will house. We recently toured Palomar College's equivalent CSIS facilities and they are outstanding; we hope ours can meet or exceed those.

9.4 Make a rank ordered list of program recommendations for the next six-year cycle based on the College's new Strategic Plan which includes outreach, engagement, and retention.

- 1. Recommendation:** CSIS be allowed to hire one new full-time faculty member during AY 2020/21 followed by at least one each succeeding year to replace the anticipated retirements. **Justification:** One to three retirements expected within the next one to two years leaving only two or three full-time faculty members.
- 2. Recommendations:** CSIS work with the AFT Union to negotiate for a maximum head count for number of students to a number between 30 and 35 for all online sections. **Justification:** there is no other Community College in the San Diego region with the number of 50 as we have. Only one other college even goes to 40, where most colleges are between 30 and 35. We say in all our literature that we are aimed at Student Success, yet we have simply too many students in our online classes as of Spring 2020. This is already the status in departments such as English (35) and Communications (30).
- 3. Recommendation:** CSIS full-time faculty be given strong and active participation starting with the planning phase for the replacement building(s) with associated facilities within them for buildings 51 through 55. **Justification:** We know our departmental needs better than any other person or group on campus.
- 4. Recommendation:** Continue to provide curriculum that is up-to-date, relevant, and prepares students for industry demand occupations as well as transfer to universities. In order to do this we will need to update current courses and add new courses on an annual basis. **Justification:** Student Success depends on it.

5. **Recommendation:** CSIS needs to provide technology (hardware and software) that reflects industry standards and supports the new/revised curriculum by upgrading and expanding computer classrooms and lab facilities with new state-of-the-art equipment that meets industry standards. **Justification:** Student Success depends on it.
 6. **Recommendation:** More funds to support faculty learning and training and more funds to support faculty equipment for research and development in new technologies. **Justification:** Student Success depends on it.
 7. **Recommendation:** Continue to provide CSIS technical support for CSIS faculty and students by retaining our current full-time lab manager and the student workers hired each semester to support student learning in our open lab sessions. **Justification:** Student Success depends on it.
 8. **Recommendation:** Develop a computer literacy GE course for the college. **Justification:** All campus students (not just CSIS) should be better equipped prepared for computer literacy and computer and personal gadget security.
 9. **Recommendation:** Improved marketing of the department's curriculum. A stronger support from the college/district marketing department to assist in the marketing of the CSIS program to potential students. **Justification:** Increased student demand equaling higher enrollments.
 10. **Recommendation:** Continue to collaborate with the CIS department at Cuyamaca College to align new courses. **Justification:** Do not duplicate course content which causes the two departments to compete for the same students.
 11. **Recommendation:** A stronger and more effective collaboration between other departments on campus in the development of cross discipline courses. **Justification:** Student Success depends on it and departments should not be competing for the same student taking the same course.
 12. **Recommendation:** Create additional articulation agreements with the UC, CSU, USD, and National Universities. **Justification:** Give our students more transfer options that include units taken in Grossmont's CSIS department.
-

APPENDICES

Please follow these instructions when gathering appendices information.

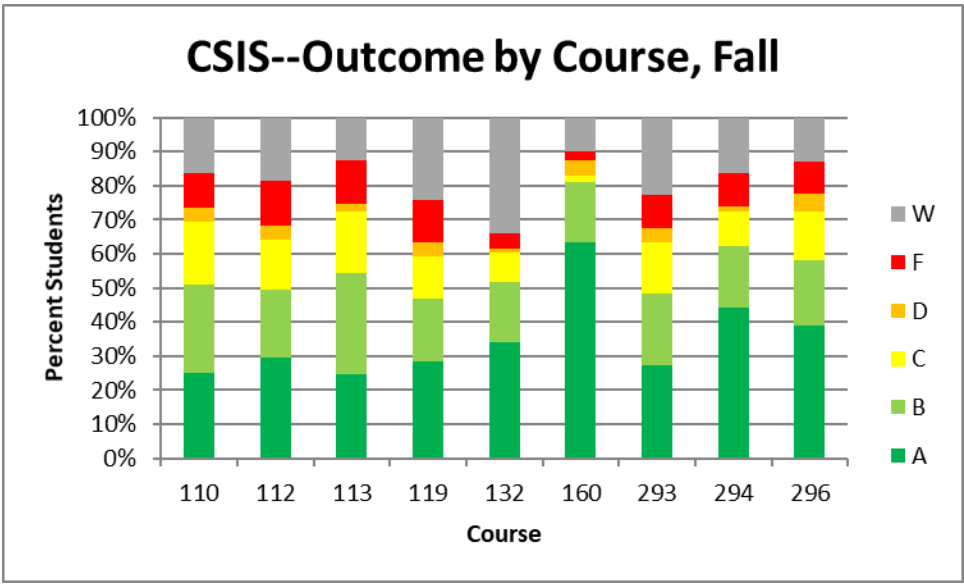
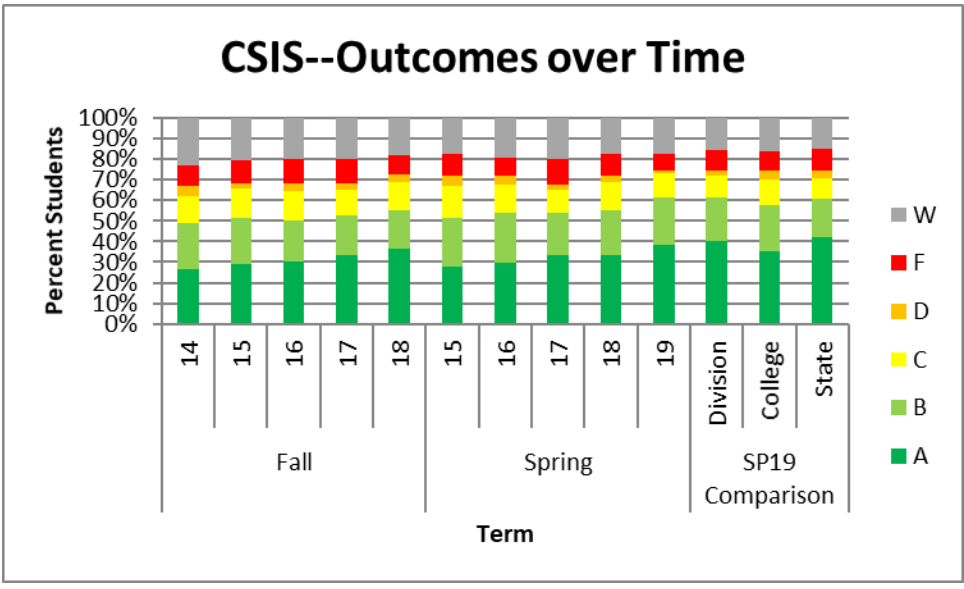
Please place tabs in front of each appendix with the appendix number and title. Please paginate the appendix as well, continuing the page count from the rest of the report.

1. Grade Distribution Summary – Page 13
2. Enrollment Data -
3. Student Success Data – Page 14, 15
4. Checklist Documentation (SLO, Instructional Operations, Articulation Officer, Library)

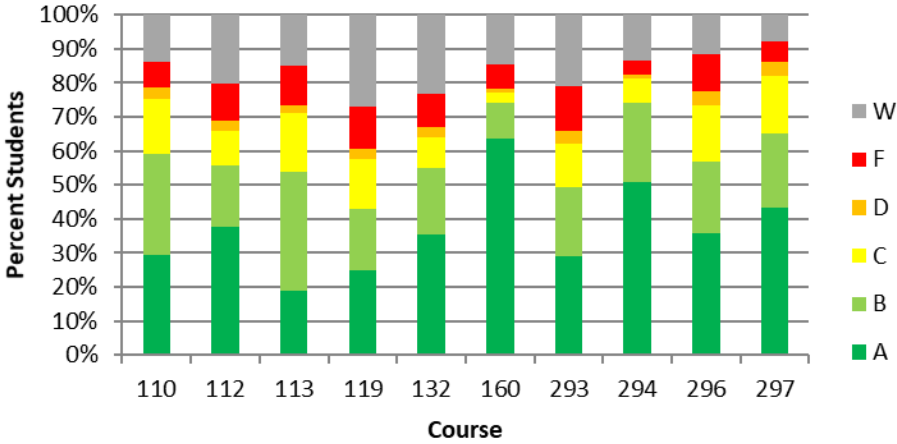
See below:

5. Answer to committee follow up questions. This step is completed *after* the committee reads your report. Add your answers to the digital copy of your report, and email a digital copy to the Program Review Chair.

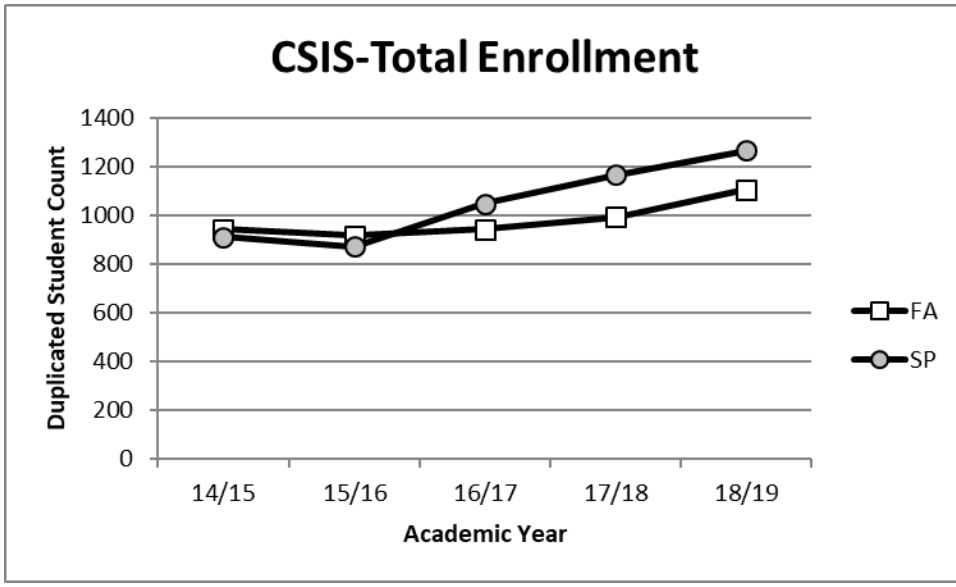
Appendix 1. Grade Distribution Summaries



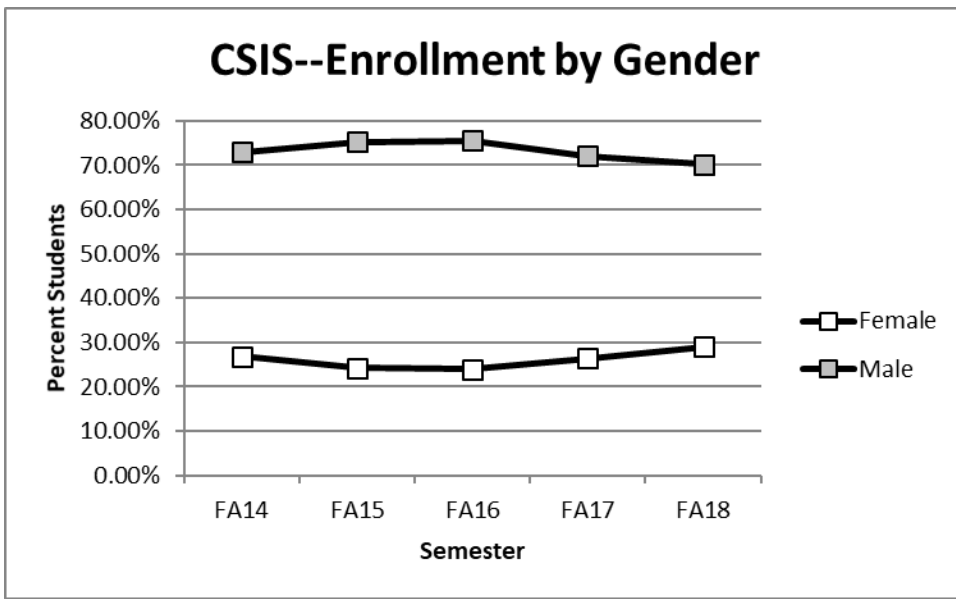
CSIS--Outcome by Course, Spring



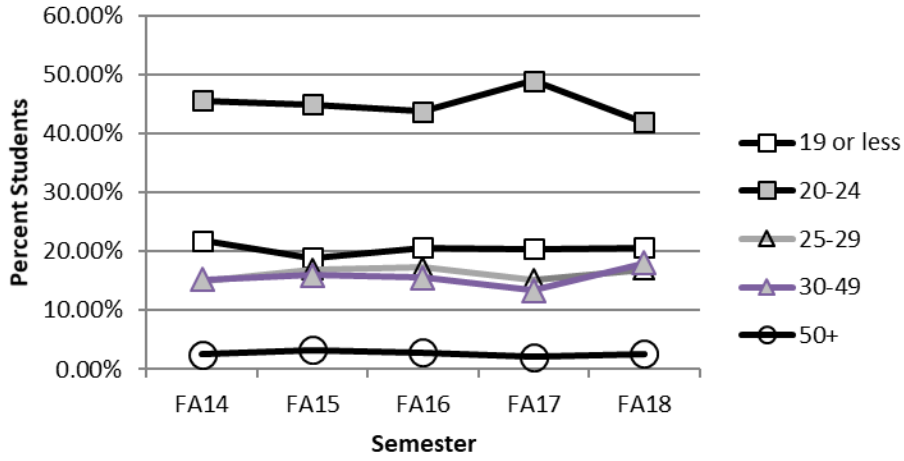
Appendix 2. Enrollment Data



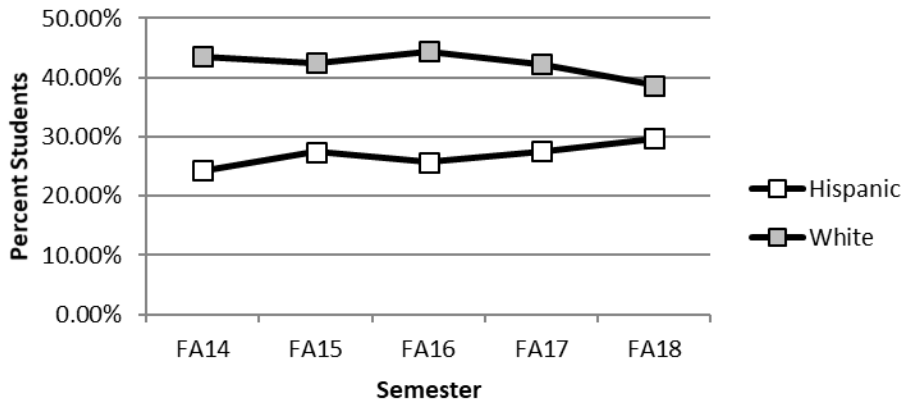
Disaggregated Enrollment Data



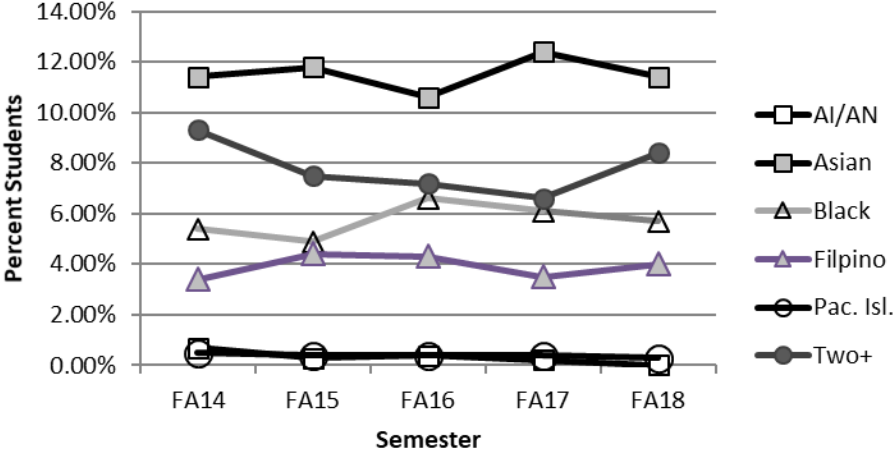
CSIS--Enrollment by Age



CSIS--Enrollment by Ethnicity, Hispanic & White



CSIS--Enrollment by Ethnicity, Other

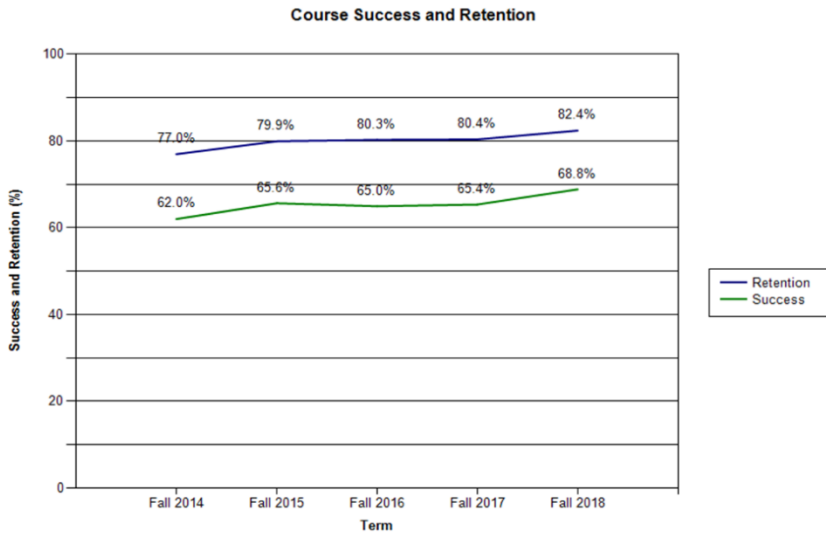


Appendix 3. Student Retention and Success Data

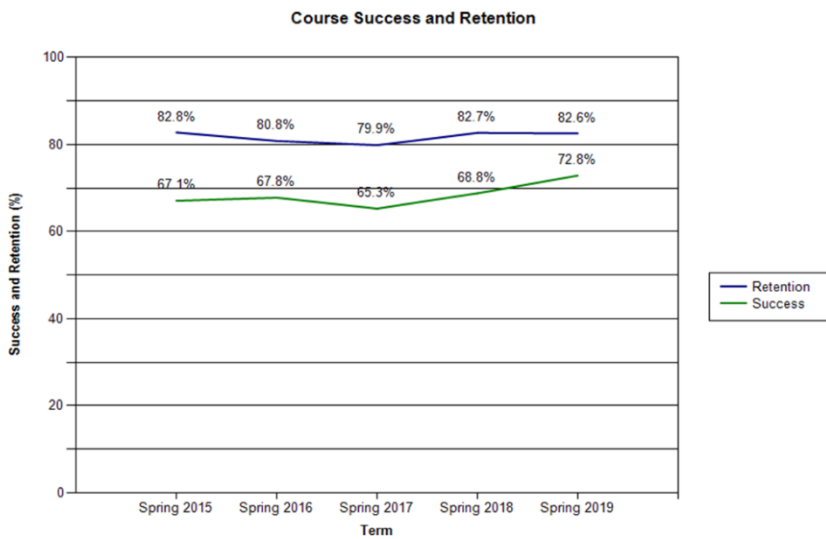
College 5-YR Averages: Success 69% and Retention 84%

College Targets: Success 75% and Retention 85%

All Students: Fall



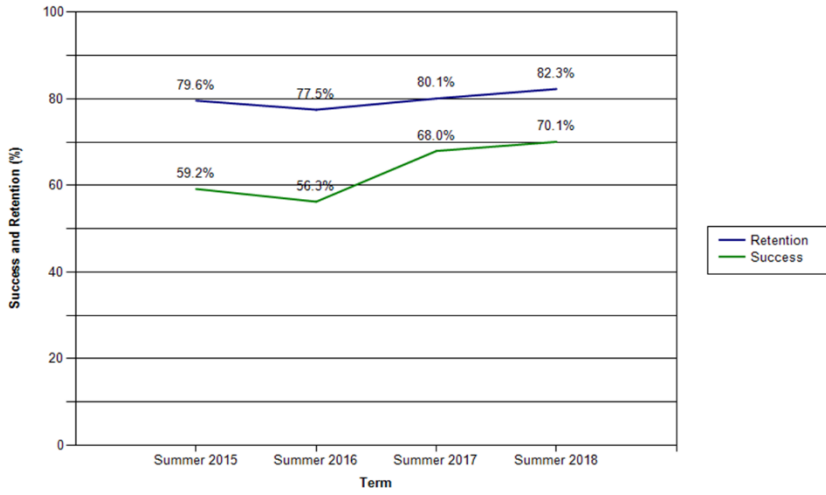
All Students: Spring



Page Break

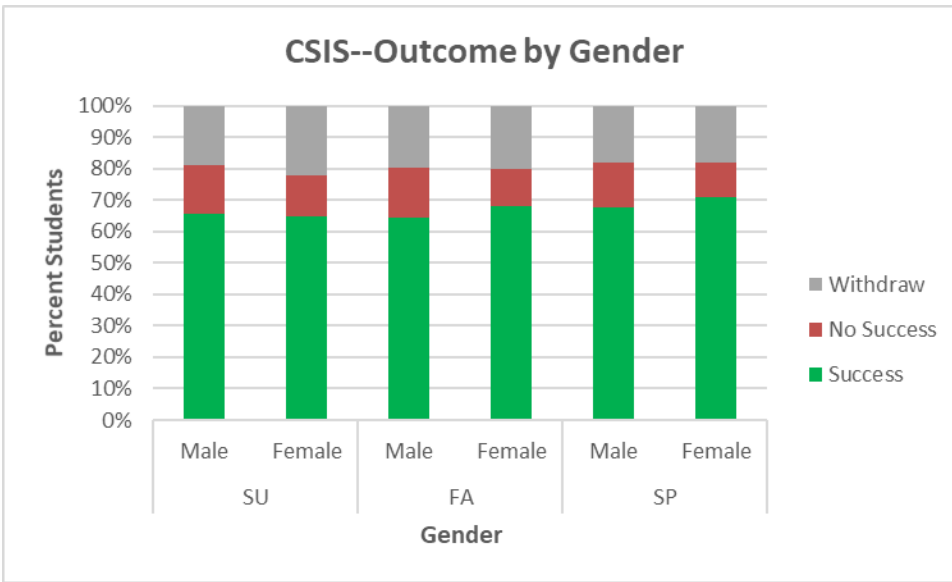
All Students: Summer

Course Success and Retention

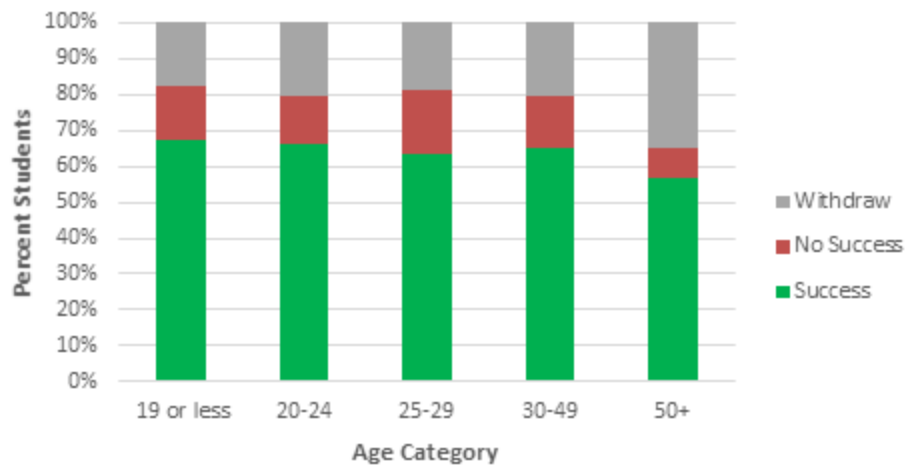


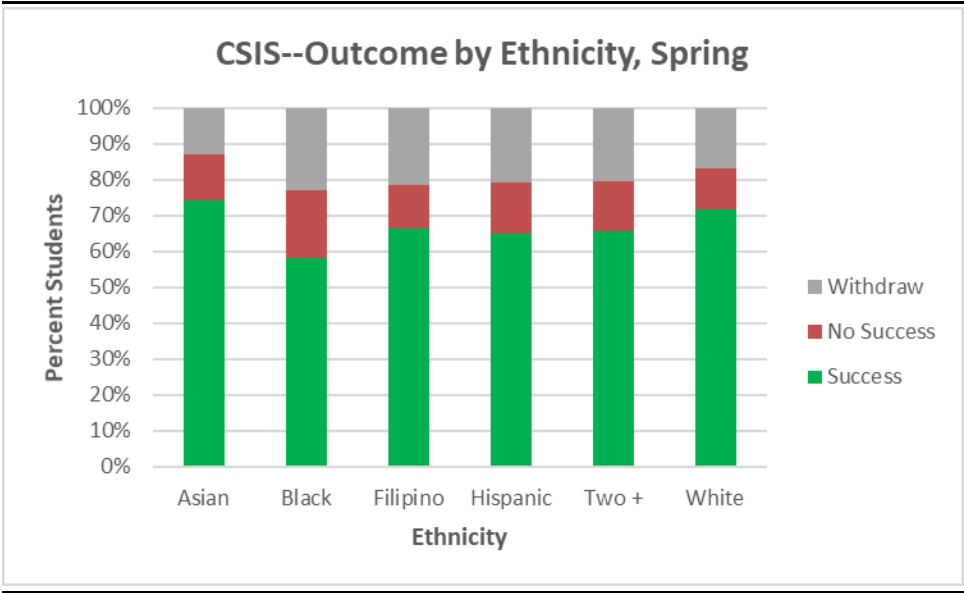
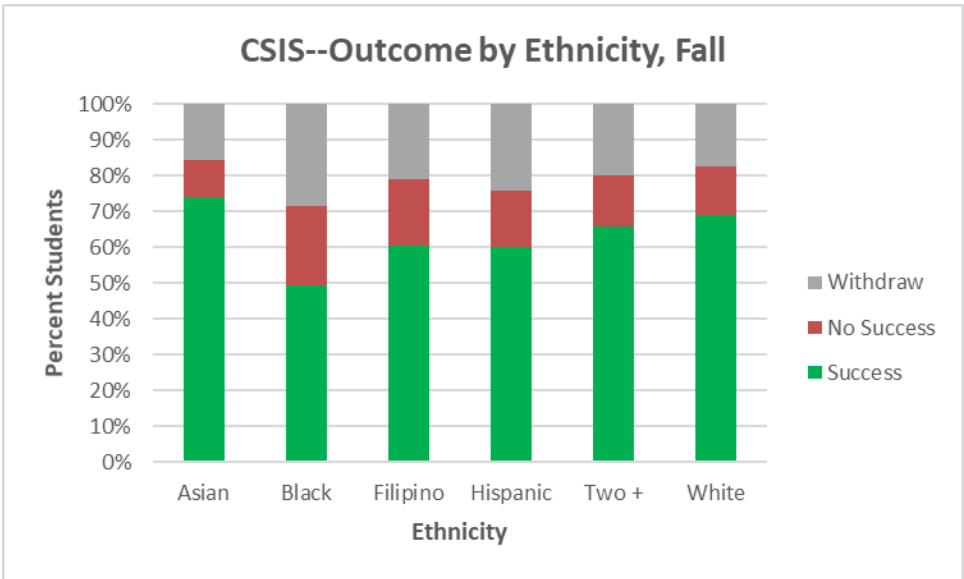
Student Success & Retention, Disaggregated

CSIS--Outcome by Gender



CSIS--Outcome by Age Category, Fall





American Indian/Alaska Native is not shown since sample size is too small.

Checklist 1: Articulation Officer Report:

Date: May 15th, 2020

To: Clif Quinn, Department Chair

From: M. Denise Aceves, Articulation Officer

Re: Computer Science • Program Review Checklist

The process of articulation is two-fold. First, transferability must be established. A transferable course is one that is taken at a community college and can be used for unit credit at a university. The next step, is the articulation of courses deemed transferrable. Articulation is the formal, written agreement that identifies courses on a “sending” campus that are comparable or acceptable in lieu of specific course requirements at a “receiving” campus. Thus, articulation identifies courses that a student should take at community college to meet university degree requirements.

In response to your request for articulation information, Computer Science courses at Grossmont College are well-articulated. All formal articulation with our 4-year public education partners can be found at [ASSIST.org](https://www.assist.org), which is the public articulation repository available to current and potential college students. Please note that ASSIST.org currently only reflects partially updated information.

All of the Computer Science courses transfer to the CSU and several of the advanced courses transfer to the UC. These courses provide elective credit or assist students with meeting major preparation requirements. Most recently, CSIS 240 was evaluated to meet CSU GE requirements in the area of Mathematics and Quantitative Reasoning. All courses that have received transferability designations are notated as such at the end of each course description in the Grossmont College Catalog. The courses with course to course articulation by department with specific CSUs and UCs can be found on [ASSIST.org](https://www.assist.org).

Locally, our public 4-year educational partners include: San Diego State University (SDSU), California State University San Marcos (CSUSM) and the University of California, San Diego (UCSD). Articulation with the corresponding departments are robust and Grossmont College’s Computer Science courses have attained course to course articulations. **The department is encouraged to review their course to course articulations on [ASSIST.org](https://www.assist.org) and work with me, the Articulation Officer, to correct any inconsistencies.**

The Computer Science Department has also successfully offered the [Computer Science AS-T](#) in compliance with Senate Bill 1440. To this end, the Computer Science Department has worked collaboratively with the Curriculum Committee, Instructional Operations and the Articulation Officer to establish the Computer Science AS-T. Similarly, the department has been responsive to Course Identification (C-ID) required for courses in the degree.

Articulation is facilitated with current, concise and thorough course outlines. It is imperative that the outlines and text books listed be current. The Title 5 requirement that course outlines be updated every 5 years through the Grossmont College Curriculum process is vital. Students benefit from the many colleges and universities who have articulated our courses in Computer Science. Below I have listed the link to *The Course Outline of Record: A*

Curriculum Reference Guide Revisited, a document adopted by the Academic Senate for California Community Colleges in Spring 2017, as well as the latest standards for CSU GE Breadth and IGETC.

Curriculum Resources

- [The Course Outline of Record: A Curriculum Reference Guide Revisited](#)
- [Guiding Notes for General Education Course Reviewers](#)
- [Standards, Policies & Procedures for Intersegmental General Education Transfer Curriculum, Version 1.9](#)

You are welcome to contact me directly at mariadenise.aceves@gcccd.edu with any questions regarding this report.

Checklist 2: Instructional Operations List of Classes to Update:

| CSIS Classes | Last Revision Date | Notes: |
|--------------|--------------------|--|
| CSIS 100 | May-14 | This was a BOT class, CSIS is Dropping as of Fall 2020 |
| CSIS 105 | Dec-12 | |
| CSIS 110 | Dec-17 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 111 | Dec-15 | |
| CSIS 112 | Dec-12 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 113 | Dec-12 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 119 | Dec-15 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 120 | May-18 | |
| CSIS 121 | May-18 | |
| CSIS 125 | May-18 | |
| CSIS 130 | May-18 | |
| CSIS 132 | Dec-13 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 133 | Dec-13 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 135 | Dec-13 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 145 | Dec-12 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 147 | May-17 | |
| CSIS 151 | May-12 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 152 | May-12 | Updating this Fall 2020 Deleting this Fall |
| CSIS 160 | May-17 | |
| CSIS 161 | Apr-09 | Updating this Fall 2020 |
| CSIS 165 | May-19 | |
| CSIS 172 | Apr-04 | This was a BOT class, CSIS is Dropping as of Fall 2020 |
| CSIS 176 | Apr-04 | This was a BOT class, CSIS is Dropping as of Fall 2020 |
| CSIS 180 | May-17 | |
| CSIS 195 | May-17 | |
| CSIS 213 | May-18 | |
| CSIS 230 | May-18 | |
| CSIS 240 | Dec-18 | |
| CSIS 250 | May-18 | |
| CSIS 251 | Dec-19 | |
| CSIS 255 | May-20 | |
| CSIS 263 | May-19 | |
| CSIS 264 | May-18 | |
| CSIS 265 | May-18 | |
| CSIS 276 | Dec-15 | Updating this Fall 2020 (Paperwork already turned in) |
| CSIS 282 | Dec-12 | CSIS is Dropping as of Fall 2020 |
| CSIS 290 | Dec-12 | Updating this Fall 2020 (Paperwork already turned in) |

| | |
|----------|--------|
| CSIS 291 | May-17 |
| CSIS 293 | May-18 |
| CSIS 294 | May-18 |
| CSIS 295 | May-18 |
| CSIS 296 | May-16 |
| CSIS 297 | Dec-12 |

Updating this Fall 2020 (Paperwork already turned in)

SLO Report

PSLO Assessment Summary

| | Program Student Learning Outcomes | Assessment Methods | PSLO Assessment Results/Analyses | Actions | Follow-Up |
|---|-----------------------------------|--------------------|----------------------------------|---------|-----------|
| ✘ | 1 | 0 | 0 | 0 | 0 |
| ✘ | 2 | 0 | 0 | 0 | 0 |
| ✘ | 3 | 0 | 0 | 0 | 0 |
| ✘ | 4 | 0 | 0 | 0 | 0 |

Course Summary - Owned

| | Courses | SLOs | Assessment Methods | Course SLO Assessment Results/Analyses | Actions | Follow-Up |
|-----|---|------|--------------------|--|---------|-----------|
| ▶ ✘ | CSIS 100 - Basic Keyboarding | 1 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 105 - Introduction to Computing | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 110 - Principles of Information Systems | 3 | 1 | 1 | 1 | 0 |
| ▶ ✘ | CSIS 117 - Beginning Web Page Design | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 112 - Windows Operating System | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 113 - Introduction to UNIX | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 119 - Computer Programming Introduction | 3 | 0 | 0 | 0 | 0 |
| ▶ ✔ | CSIS 132 - Introduction to Web Development | 3 | 3 | 3 | 0 | 0 |

SLO (CTE/WD) - Computer Science Information Systems

Welcome, felicia.kalker

Home

| | | | | | | |
|-----|---|---|---|---|---|---|
| ▶ ✘ | CSIS 133 - Intermediate Web Development | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 135 - JavaScript Programming | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 145 - Introduction to TCP/IP | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 147 - Internet Marketing | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 151 - Introduction to Photoshop | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 152 - Intro to 3D Animation Applications | 8 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 160 - Intro to Video Game Development | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 161 - Intermediate Video Game Development | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 165 - Assembly Language & Machine Architecture | 0 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 172 - Intro to Microcomputer Applications | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 177 - Microsoft Powerpoint | 0 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 180 - Fundamentals of Database Design | 0 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 190 - Digital Multimedia I | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 195 - Video Editing on the PC | 3 | 0 | 0 | 0 | 0 |
| ▶ ✘ | CSIS 199 - Special Studies or Projects in Computer Science Information Systems | 0 | 0 | 0 | 0 | 0 |

| SLO (CTE/WD) - Computer Science Information Systems > Home | | | | | | | | | |
|--|---|--|-----|---|---|---|---|---|---|
| | ✗ | CSIS 213 - Intermediate UNIX | New | 0 | 0 | 0 | 0 | 0 | 0 |
| | ✗ | CSIS 240 - Discrete Structures | New | 0 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 251 - Intermediate Python Programming and Fundamental Data Structures | | 3 | 0 | 0 | 0 | 0 | 0 |
| | ✗ | CSIS 260 - Information Security | | 0 | 0 | 0 | 0 | 0 | 0 |
| | ✗ | CSIS 276 - Introduction to SQL | | 0 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 288 - Introduction to Visual Basic Programming | | 3 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 289 - Intermediate Visual Basic Programming | | 3 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 290 - Introduction to C# Programming | | 3 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 291 - Intermediate C# Programming | | 3 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 293 - Introduction to Java Programming | | 2 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 294 - Intermediate Java Programming and Fundamental Data Structures | | 3 | 0 | 0 | 0 | 0 | 0 |
| | ✗ | CSIS 295 - Android Application Development With Java | | 0 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 296 - Introduction to C++ Programming | | 3 | 0 | 0 | 0 | 0 | 0 |
| ▶ | ✗ | CSIS 297 - Intermediate C++ Programming | | 3 | 0 | 0 | 0 | 0 | 0 |

Above is our SLO report from Felicia Kalker. The CSIS Department has assigned our SLO management to Robert Gillespie and Jamie Steck as of Fall 2019 and they have done a wonderful job. They both teach the CSIS 293 and 294 courses, Intro and Intermediate Java Programming.

What is not shown is our ELO assessment of both the CSIS 110 and 293 sections, as we never entered the data into TracDat, which has not been recommended for the past couple of years. The CSIS 110 class is our largest in terms of students, at close to 400 per semester and the 293, Intro to Java Programming, with six sections is the second largest class we have.

Robert and Jamie have been part of the SLO group which meets with Felicia and she says we are doing wonderful things.

On this report are several classes which we have deleted or are deleting, such as CSIS 100, 172, 177, 190, 199, 260, and a few others which we have not offered for several years, such as CSIS 111, 152, 195 and 291. There are also many new classes which are not on this list, such as CIS 120, 121, 125, 263, 264, and 265.

The CSIS department has made significant changes to curriculum recently, such as:

Deleting two older degrees in 2018 and adding three new degrees and a new Certificate of Achievement along with multiple classes over the past two years:

- Cybersecurity and Networking
- Information Technology Support Technician
- Computer Science Associate Degree for Transfer
- And the Data Science COA

CSIS has also worked on drafting new Program SLOs (Sp2020) begun curriculum mapping.

September 2020

Grossmont College Library Collections in Computer Science and Information Systems—CSIS.

Books

The following are the number of books by subject in the library collection.

| <u>Subject</u> | <u>Call Number Range</u> | <u>Number of Books</u> |
|-------------------|--------------------------|---|
| Computer Science | QA 75.5 - QA 76.95 | 7530 electronic books 42 print books |
| Computer Hardware | TK 7885 - TK 7895 | 416 electronic books |
| Networks/Internet | TK 5105 - TK 5105.888 | 10 electronic books 55 print books |

The following depicts spending for the last four years (September 2016 through September 2020) for both print and electronic books to support the CSIS curriculum. Book purchases across the curriculum are based on a formula that incorporates FTES.

| <u>Subject</u> | <u>Call Number Range</u> | <u>Items</u> | <u>Spent</u> |
|----------------|--------------------------|--------------|--------------|
| CSIS | QA 75.5 – QA 76.95 | 113 | \$4698 |

Over the last four years, the library has also purchased large ebook collections to support STEM curriculum from known scientific publishers such as Springer and Wiley that contain substantial holdings in Computer Science.

Periodicals

The Grossmont College Library provides access to over 600 Computer Science periodical titles through subscription databases such as *Academic Search Premier* and *Gale Academic OneFile*. These databases are keyword searchable and link directly to articles on topics such as coding, engineering, networking and development. Some of the articles in these databases are available full text, while others may only have abstracts and bibliographic information. Articles may be ordered via our Interlibrary Loan service if they are not available full text in the databases.

The following are examples of the number of periodical titles which we have access to through online databases by topics related to Computer Science.

| | |
|----------------------------------|---------------------------|
| Computer Networks and Networking | 44 electronic periodicals |
| Artificial Intelligence | 35 electronic periodicals |
| Computer Software | 29 electronic periodicals |
| Computer Industry | 25 electronic periodicals |
| Internet | 24 electronic periodicals |
| Computer Programming | 17 electronic periodicals |
| Data Processing | 17 electronic periodicals |
| Computer Engineering | 10 electronic periodicals |

Media

The library also has an extensive streaming video collection through databases such as *Films on Demand*, *Kanopy* and *Swank*, which have many videos related to Computer Science. For example, the CSIS department is supported by

streaming media titles such as “How to Program-Computer Science Concepts and Python Exercises” and “Principles of Cloud Computing – Perspectives on Business, Technology & Cost”.

Academic Program Review-Follow-up Questions

After reading each report the program review committee develops a list of follow-up questions. This allows us to get a deeper understanding of your department's operations and guides our commendations and recommendations for the next program review cycle (6 years). We have tried to make these questions clear and very specific to minimize this effort. Please email the answers to the questions below to joyce.fries@gcccd.edu and Kelly.menck@gcccd.edu by: .

| Section/Page | Question | Response |
|----------------|---|--|
| 1.1 (also 9.4) | <p>You noted that there has been discussion of developing a computer literacy program. What are the roadblocks? Has there been any progress made on this possibility?</p> | <p>Oh wow, isn't it amazing that we have a college which has a mission, in part, of "Preparing Students for the Workplace of Tomorrow", and yet a student can get their AA or AS Degree without taking even one computer course. In CSIS we have not been able to get a course into the GE package or as a graduation requirement.</p> <p>Many years ago we created a CSIS 101 – Information Literacy course, with portions allocated to basic software, such as Word Processing, Spreadsheets, maybe a Slideshow software and basic file management skills. Then a portion would deal with Privacy and Security, another with Ethics, and a little about the machine and hardware capability, such as what is a network, etc.</p> <p>The process of creating and getting a class like this, even at 1 or 2 units, is simply too daunting at this time.</p> |
| 1.3 | <p>How do you publicize these career options to student?</p> <p>What is more popular amongst students: Transferring to a 4 year institution, or attaining a degree & certificate? Why do you think that is?</p> <p>Are there any collaborative opportunities where students could shadow/intern/or, faculty mentor students (Any relations w people outside in the industry)?</p> | <p>We publicize our offerings in regards to degrees in places such as the College Catalog, our campus Display Case, on the college and department web sites, and at CTE open houses, and more. As for the Career Options, those are discussed in each class as well as with all the above.</p> <p>What is more popular, in regards to degree/certificate or transfer, depends on a variety of things. For example, in the CSIS 110 class, 90+% of the students are pursuing a degree in Business, such as at SDSU. The 110 class is a requirement. In many classes, such as those in the IT Support and Cybersecurity area, the students are focused on a 2-year degree or certificate. In many classes the goals of the students are different.</p> <p>There are a host of collaborative possibilities, but those often take some initiative from the students. We used to require some Work Experience classes to get a degree, but the effort in arranging that become very unwieldy.</p> |
| 2.2 | <p>How do you manage course outlines that are taught by adjuncts only?</p> | <p>Ah-ha, we have been doing just that for the past two months. We send the official course outline to the adjunct faculty member and politely ask for input. Then, we assign the full time faculty member who is most appropriate for that class to review the comment and updates. We have had no problem getting</p> |

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| | <p>How do all faculty members remain current in the field?</p> <p>How do faculty decide what courses need to be deleted/added, and which courses are relevant to students? Is there a review process? Student surveys?</p> | <p>the adjunct faculty to participate as needed since we truly appreciate their efforts and respect their time and energy.</p> <p>All faculty are encouraged to continue with Professional Development activity. Most of our faculty also have side jobs that involve working in the 'real world' off campus.</p> <p>As for course deletions, we deleted five courses last week. Typically the Dept. Chair will get a list from Instructional Operations listing what classes need to be updated for the six-year requirement. On that list we may see a class or two that we have not offered in a long time. If we do not plan to offer in the near or foreseeable future, we take a Department vote and if enough want to, we delete the class from the catalog.</p> <p>In regards to adding a new class or program, we discuss this at the beginning of every semester. There is no official student survey but each faculty member does interact with students. There is not a formal review process, just smart heads getting together and deciding.</p> |
| | <p>Can you elaborate on what the faculty orientation entails?</p> | <p>For each person it is different, depending on the background of the faculty. For adjunct faculty members, they each take the Online Teaching course with Canvas. We provide connections to existing faculty members and offer sample syllabi. I believe we have an excellent and efficient method of orienting our adjunct faculty. Also, we have a potluck to start each semester, we have a semester-ending party each semester, as well we offer a monthly social dinner as an option.</p> |
| <p>2.5</p> | <p>It was mentioned that 40% of students getting A grades is on the lenient side. Does the department feel this is unusually generous?</p> <p>Please comment on the unusual difference between outcomes in 160 versus other courses.</p> | <p>Some of us feel that this is indeed too lenient.</p> <p>I regards to the CSIS 160 class, I did notify the instructor and brought to his attention that it was noticed that his grades are unusually high. The class is titled, "Introduction to Video Game Development", which is popular and attracts a unique student. His reply was; "It's an introductory course and enthusiasm is high so generally all students work hard, there are a few each semester that do not put in a high effort and those few will end up with C or Lower. Those in the top have less separation in results. "</p> |
| <p>2.6</p> | <p>It was mentioned that programming is simply not for everyone. What has the department done to ensure the course is accessible to everyone who is interested?</p> | <p>The class is certainly 'accessible' to everyone, but just like with music, dance, and basketball, some have the talent and ability to do well while others do not.</p> |

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| 2.7 | <p>Are there any additional plans to collaborate with K-12?</p> <p>Can you tell us more about the articulation you have for CSIS 132, and with what high school is this? How many students are involved?</p> | <p>Ah-ha! For the CSIS 132 class, Introduction to Web Development, this class is taught in a similar manner at several of the local high schools. At Grossmont High School, for example, their Web Development teacher is faculty with us in CSIS. My own son took the class and I could see that in a one year period, meeting five times per week, they could easily cover the material that we cover in one week.</p> |
| 2.8 | <p>Are there any additional areas of concern regarding transfer and articulation?</p> | <p>I don't see any areas of concern at this time.</p> |
| 3.1 | <p>You mention "umbrella SLOs." Are these Program Learning Outcomes (PLOs)? How many PLOs did you create? Can you share a few of the PLOs with us?</p> <p>Are there any updates on the new Learning Outcomes that you submitted last semester?</p> | <p>Yes, by "umbrella SLOs", we meant PLOs. We created 7. We did not submit them last semester, but we will this year. Here are 3 of the 7 as a sample:</p> <ol style="list-style-type: none"> 1. Analyze a computer-related problem to design and implement a technologically feasible and efficient solution. 2. Demonstrate competency in basic knowledge of hardware, Application or Programming software, and Operating Systems. 3. Demonstrate skill in the use of technology and its ethical and responsible applications. |
| 3.2 | <p>What areas were not being "covered" when you looked at the outcomes in the Java Programming classes? What changes were implemented?</p> <p>Please provide more detail about your SLO findings and how those lead to changes.</p> | <p>It wasn't that they weren't covered; they were being covered. It's that they weren't covered as well as we thought based on student results. For instance, accessing 2-dimensional arrays in nested for loops wasn't getting picked up by students as well as we would have liked. More emphasis on an area like this was the result. Whereas maybe only one week was spent on it with the same weight as any other weekly topic, more time will be given in the future via lecture/exercise/lab.</p> |
| 3.4 | <p>What types of corrections or changes are being made?</p> <p>Please provide a classroom example of a change made to address your data/SLO evaluation.</p> | <p>To follow up on 3.2's addendum above, more time and care is being given via lecture/exercise/lab to give students more opportunity to practice/hone that skill.</p> <p>A specific example is on the 2-dimensional array lab. There is now a requirement to not only populate a grid with random data, but that data needs to be printed out in a separate process, thus doubling the 2-D array traversal implementation using nested for loops. This has then been extended into the</p> |

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| | | <p>following week's lab on linked lists where that same 2-dimensional lab is now expanded to incorporate a layered linked list to track the user's traversal of the grid. The 2-dimensional array traversal using for loops must be then revisited to adjust for the linked list implementation. This provides more opportunities for the student to demonstrate mastery, but also provides more opportunity to see where a student is falling short due to the multiple different implementation approaches.</p> |
| 4.1 | <p>You mention challenges in online courses due to the increase from 30 to 50 class size. What student support is offered to increase equitability and help prevent at-risk students from dropping?</p> | <p>We have moved the tutors to Zoom and email to maximize their availability to all students. We also offer a service called NetTutor which is an outside service of tutors who can help students with their studies</p> |
| 4.2 | <p>You indicated that faculty may be using resources other than Canvas for posting grades. What other platforms are faculty using to manage courses? Why isn't everyone using Canvas?</p> | <p>All the CSIS faculty use Canvas. There are other tools, however, that book publishers provide that have course management included, such as Some publisher-supplied options include TestOut and SAM. There is no requirement to only use Canvas.</p> |
| 4.4 | <p>What are some of the latest developments that you would like to explore regarding Cloud computing degrees and career paths?</p> | <p>AWS (Amazon) looks like an interesting area to explore once students get back on campus. There is already some industry-created curriculum for the Amazon Web Services software. Over at Cuyamaca College they are looking into this and we try to work together whenever possible.</p> |
| 5.1 | <p>Do you make any efforts to recruit or retain Hispanic or Black students?</p> <p>What do you notice about success of older students (40+) in your courses? (The success rates are lower than at the college overall.)</p> <p>What strategies are you doing in the dept. to encourage diverse students?</p> | <p>We invite ALL students to join us. We invite and try to retain Veterans, High School students, older students, many foreign students, and with no specific tactics, other than being very inclusive.</p> |
| 5.2 | <p>Tell us more about the Gaming Club and the CS Club.</p> | <p><u>Tell us more about the Gaming Club.</u></p> <p>Gaming club meets every Friday on campus during non-Covid 19. During Covid 19 Gaming club is held virtually on the Discord app. https://discord.com</p> |

| | | |
|-----|---|---|
| | <p>How do instructors present or curate the WWW content for students? To help them find the right kinds of resources...</p> <p>Do other courses also offer OER?</p> <p>To what do you attribute the gradual increase in student success in Fall semesters over the program review period?</p> | <p>Game club members meet to discuss and play video games, both current releases and older games. The club also occasionally participates in game tournaments, and local game related events.</p> <p><u>How do instructors present or curate the WWW content for students? To help them find the right kinds of resources...</u></p> <p>In CSIS 160 I provide WWW content to supplement course materials, curated from my knowledge and experience as a game developer including resources from professional game conferences, game development dedicated sites, and recommended resources from the IGDA (International Game Developer's Association) https://igda.org</p> <p><u>Do other courses also offer OER?</u></p> <p>We have three courses using OER:</p> <ul style="list-style-type: none"> - CSIS 113 – Introduction to Linux - CSIS 132 – Introduction to Web Development - CSIS 133 – Intermediate Web Development <p><u>To what do you attribute the gradual increase in student success in Fall semesters over the program review period?</u></p> <p>To be honest, I do not know, other than perhaps students are more motivated in the Fall semester.</p> |
| 5.3 | How does sharing the computer labs with other departments work for your department? | Very well. Our lab technician is able to schedule other departments and be sure that software is appropriate for all our lab users, no matter which department/division. We have had no problems in this area. |
| 5.6 | Do you encourage students to apply for their AA? | Absolutely. |
| 5.7 | Do you have any anecdotal data on students getting jobs in industry, successfully transferring...? | Of course, all faculty have a story or two about students succeeding at a 4-year college or joining the workplace. But anecdotal data is just that, and not very helpful for comparisons. I could list a whole set of stories in this area, and this is truly one of the most rewarding parts of teaching in this field. For me personally, one of my former students now teaches CIS at Cuyamaca College full time! |

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|-----|---|--|
| 6.1 | <p>Could CSIS embedded tutors also serve students as programming tutors?</p> <p>How effective are your efforts to direct students to tutoring and campus resources? (Do they go?)</p> <p>How are you collecting data to show the success of your tutoring program and garner support?</p> | <p>Yes, CSIS embedded tutors can also serve as programming tutors.</p> <p>Our efforts to post flyers, big signs on the tutoring doors, tutoring hours on the CSIS website, and Canvas announcements are very effective to direct students to go to tutoring and campus resources. They do go to tutoring as the tutoring room has a lot of students.</p> <p>Tutors keep track of the number of students they tutor and more tutors are hired when more students are attending tutoring hours.</p> |
| 7.0 | <p>What activities did you do 2014-2017? Please be more specific—provide examples.</p> | <p>I am not sure how to answer this question. In those years we also had our CSIS Open Labs. We have held these for over a decade and they are popular and essential to many students. We not only offer the tutoring services, but in the Open Labs, students have access to all the software we use in the classes. Back in around 2014 we arranged with the LTRC to have five computers set up with the exact same software that is used in the CSIS labs, which allows students to use our software when our labs are closed.</p> |
| 7.1 | <p>Can you provide <u>specific examples</u> of how your on and off campus activities directly impact student success? What are some of the “new ideas” that affected curriculum development?</p> | <p>By attending off campus conferences, we were able to bring new ideas into the CSIS curriculum to develop a new Cybersecurity and Networking Associate’s degree. By holding on-campus industry advisory board meetings, we were able to brainstorm new ideas for the new Cybersecurity and Network Associate’s degree.</p> |
| 8.1 | <p>Although enrollments have been increasing, low fill % indicate that you have grown course offerings faster than the student demand warrants. What is your process for deciding on section numbers? Which courses tend to fill vs. not fill?</p> | <p>Hah! I believe that the lower fill percentage is 100% due to the increase of our online classes from what is stated in the contract, where it says that online classes should be set at this size of the in-person sections, which in our case are 24 – 33 students, to a now crazy number of 50 students per class. We in CSIS completely understand that in many subjects, 50 per class may make sense. All pedagogy studies we see say that 50 per class is not logical, if you truly want any one-to-one instruction. Anyway, that is a different story, but with our classes of Programming, Web Development and technical subjects, to put 50 students in the class, while expecting true attention to the coding from each student is not logical. We have had adjunct faculty simply quit.</p> <p>As for determining the number of sections, that has evolved over time and I think we are extremely efficient. If anyone happens to look at the current semester, Fall 2020, you will see that our fill rates are excellent! Where they may not appear excellent is in a subject where we typically get 25 – 30 students</p> |

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| | | <p>per semester, such as a JavaScript class, or advanced Cybersecurity class. When we had these online at 24 students per class, we looked great, and then when the class gets bumped up to 50, we only look half full!</p> <p>In terms of which classes tend to fill, well, by far those that are part of a transferrable degree fill fastest, such as CSIS 110 which is required for Business majors, and CSIS 293, Intro to Java Programming, which is required for Computer Science majors. There are others, but these are two examples. Those that fill more slowly are excellent subjects, but maybe not part of a transferrable requirement, such as CSIS 105, Introduction to Computers, or other technical subjects.</p> |
| 8.3 | <p>How many tutors will you need? Do you anticipate being able to afford these tutors with your budget?</p> <p>What tutoring model does your department make use of? Have you rethought this model given the budget cut? p36</p> | <p>We will require at least 5 tutors to be able to provide the minimum needed support. If we continue our growth in number of students (of 8%) then will need to hire an extra tutor. Our budget is just about enough to cover tutor costs. We did lose 2 tutors before the start of the Fall semester 2020, however we managed to hire one more tutor to help with the 110 classes.</p> |
| 8.5 | <p>Why would it be “expected” to not find “top talent” to staff daytime classes? p38</p> | <p>We can find ‘recently retired’ faculty for any time of day classes, but during the daytime hours, <i>most working age technically savvy people are working</i>, and typically at a much higher rate of pay, hence it can be hard to get someone to staff those classes. This is another reason we teach many classes with the hybrid or online models.</p> |
| 8.8 | <p>What kind of quality control is used for the tutors and the greeters? Is there a form of evaluation? In terms of efficiency: How can you ensure that the use of tutors and greeters is achieving its purpose? p39</p> | <p>We use WOnline that is provided by the tutoring center at Grossmont. It is a website where the tutor enters data about the students they are helping. This data include: how long the tutor spent time with the student, what kind of questions the student asked, and what subject and class the students need help with. The WOnline can provide us with surveys of the students’ experience and a report of the utilization of the online lab. The budget gets adjusted according to the utilization of the online lab.</p> |
| 9.1 | <p>Please give us examples of specific outreach efforts you have done.</p> | <p>High school meetings at El Capitan, lunches and dinners in Griffin Gate, and more. Javier and the entire CTE Division host multiple outreach events throughout the year. I recall one evening at El Capitan high school, where we literally had the college President, VP Mike Reese, Javier Ayala the dean of CTE, as well as several counselors and full time and adjunct faculty. That was quite the turnout!</p> |

GROSSMONT COLLEGE
SPRING 2020 **COMPUTER SCIENCE & INFORMATION SYSTEMS**

**PROGRAM REVIEW COMMITTEE
SUMMARY EVALUATION**

The committee recommends maintaining this program. Following are the committee's specific commendations and recommendations.

The Program Review Committee commends the department for:

1. Major curricular update:
 - a. adding new courses and degrees in Python and cybersecurity
 - b. aligning with Cuyamaca
 - c. Data Science COA and Transfer degree
2. All faculty DE trained and share course containers with adjuncts; work together to standardize multiple-section courses
3. Creating an SLO team, reviewing and writing new PLOs and SLOs. Creating a quiz to test SLOs across sections.
4. Increasing student engagement with successful
 - a. OER and e-learning materials
 - b. Gaming Club
 - c. Office hours and tutors in computer labs
5. SD4C Consortium participation to ensure that students are well prepared for transfer/jobs and cooperation and collaboration with other community college CS departments.

Committee recommends the following:

1. Increase outreach/recruitment for Hispanic and/or female students
2. Implement strategies to improve success for older students and Black and Hispanic students
3. Implement more intrusive strategies to encourage students to take advantage of resources offered by the college
4. Continue increasing section offerings, but only as student demand warrants. Increase % fill and utilize efficient grading strategies i.e. rubrics available online
5. Increase targeted outreach, especially to diverse school districts and also specifically to young women such as science fairs, robotics days, gaming days, etc.; increase dual enrollment offerings
6. Follow through with developing a computer literacy course as GE

College President

Program or Department Chair

Academic Program Review Chair

COMPUTER SCIENCE & INFORMATION SYSTEMS

| Academic Year | Fall | | Spring | |
|---------------|--------|-----------|--------|-----------|
| | % Fill | WSCH/FTEF | % Fill | WSCH/FTEF |
| 2014-15 | 65.2 | 405.8 | 62.1 | 360.2 |
| 2015-16 | 57.6 | 402.5 | 61.4 | 412.2 |
| 2016-17 | 56.4 | 317.2 | 55.3 | 364.0 |
| 2017-18 | 60.8 | 339.3 | 56.7 | 433.1 |
| 2018-19 | 55.8 | 397.0 | 62.1 | 425.9 |