Program Review - 2015-2016

Computer Science

Module:	Division Purpose

Question: Describe the purpose of the Discipline/Program/Service.

Answer: The Computer Science and Application division has four primary goals.

The first is to prepare students majoring in computer science information technology for transfer to four-year universities.

Second, deliver Information Technology oriented vocational training and prepare students for technology careers.

Third, support Paralegal and office technology students learning word processing and office automation technology.

Forth, offer computer literacy courses for students to fulfill general education requirement. These goals are supported by the division by offering degrees, certifications, and certificates.

Question: Describe how the stated purpose aligns with the college mission statement.

Answer: There is an exact one-to-one correlation between the Computer Science and Application division primary goals and the college's mission statement. The college mission statement: A West education enriches students with the knowledge and skills needed to earn certificates and degrees, to transfer, to build careers, and to pursue life-long learning. The Computer Science and Application division uses advanced technology and industry skilled instructors to prepare students for transfer and technology careers.The division also helps students build basic computer skills and update existing skills through continued learning.

Module:	Enrollment Trends

Question: Describe the trends in Enrollment and FTES. Given the data, what are the implications for your division? If relevant, discuss each discipline separately.

Answer: CSIT

Our total enrollment and FTES decreased 7% from year 2013 to 2014 using fall semester's data, but the enrollment of spring semester has increased by implementing the following strategies:

Starting Spring 2015, for CSIT introductory level courses like CS901, 902, 933, 934, 965, 972, 980 and 982, we have taken more students like 50 or 60 students per section than the regular cap. We want to open the door to students who are pursuing CS transfer or IT career path. This has also balanced the average class size of lower enrollment in advanced courses which requires pre-requisites.

We still expect the enrollment to grow, the growth can be attributed to the following:

1. The job demand for skilled Computer Information Technology employees as the economy improves.

2. New Federal program launched to retrain returning veterans.

3. The division has developed and proposed new courses and new certificate in the area of mobile development, virtualization and cloud computing.

4. The division has developedand proposed new non-credit courses and certificates in the area of Robotics and Network Security.

CAOT-Legal Secretary certificate program

The enrollment and FTES has decreased due to some students have class schedule conflict between Paralegal and CAOT Legal secretary classes, the division has decided to move some on-campus classes to be on-line and hybrid in order to accommodate students in Paralegal and Legal secretary track.

Question:	Given the data, describe the trend in section counts and average class size.
Answer:	CSIT

Section counts have increased by 1 section from fall 13 to fall 14 and average class size has increased from 32 to 33. Starting Spring 2015, for CSIT introductory level courses like CS901, 902, 933, 934, 965, 972, 980 and 982, we have taken more students like 50 or 60 per section than the regular cap, the regular cap for on-line and hybrid is 40. We want to open the door to students who are pursuing transfer or CSIT career path. This has also balanced the average class size of advanced classes which require pre-requisites.

We expect sections to grow, the growth can be attributed to the following:

1. The job demand for skilled Computer Information Technology employees as the economy improves.

2. New Federal program launched to retrain returning veterans.

3. The division has developed and proposed new courses and new certificate in the area of mobile development, virtualization and cloud computing.

4. The division has developed and proposed new non-credit courses and certificate.

CAOT-Legal Secretary

Section counts are about the same as previous years, the class size has been maintained with 34 students per section.

We expect the section number and class size to grow, according to the Bureau of Labor Statistics, the job outlook is excellent for legal secretaries. Secretaries and Administrative Assistants, which also enroll in our program, are projected to have job opportunities 12% faster than average. The Legal Secretar❙ s growth category is 17% faster.

Module: Students and Student Success

Question:	Based on the demographic trends in enrollment, what are the implications for your Discipline/Program/ Service?
Answer:	CSIT

For gender distribution, we have 33% female students and 67% male students; for age group, we have 35% under age 24, 33% age 25-34 and 33% age 35 and over; for ethnic group, 34% African American and 36% Latino. More than 64% of our students are working adults, they have to take care work, family and pursuing transfer or technology career path.

There is a surge of students holding bachelors or associates degrees in other disciplines who are pursuing either a career change to IT fields or to update their skills for the job market. Another large group of students are re-training due to job loss. These students are older age 35 and older, part-time students, they are mature, and motivated. Many of these older students are returning veterans. Typically this group focuses on getting current and in-demand skills in order to quickly rejoin the labor force or improve their attractiveness to employers. Such students are less likely to pursue associates degrees or transfer status.

CAOT-Legal secretary

On the other way around, for gender distribution, CAOT has 90% female and 10% male students; for age group, we have 40% age 25-24 and 48% 35 and over. There is a surge of students holding bachelors or associates degrees in other disciplines who are pursuing a career change, another group of students are re-training due to job loss. These students are older age 35 and older, part-time students, they are mature, and motivated. Some of these older students are returning veterans. Typically this group focuseson getting current and in-demand skills in order to quickly rejoin the labor force or improve their attractiveness to employers. Such students are less likely to pursue associates degrees or transfer status.

Question:	Given the data, describe the trends in Success Rates and Retention Rates. What are the implications for the Discipline/Program/Service?
Answer:	CSIT

Overall retention rates for Computer Science dept. for on-campus from Fall 13 to Fall 14 have increased 5 % . Hybrid rates for Fall 14 are at 80% and online rates have increased from 66% to 77%. Success rates for on-campus from Fall13 to Fall 14 has decreased 2% . Hybrid rates from 61 to 59% from Fall 13 to Fall 14 ; online rose from 44% in Fall 13 to 53% in Fall 15. Success rates in CS901 including ACT have been below the division average rate, the division is holding meetings with all CS901 instructors to discuss ways to improve success rates of CS901. Online instructions continued to be challenge as we explore ways to provide better online experiences.

One challenge in particular is how to get students to take advantage of resources made available. For example, online students are often reluctant or unable to visit the campus to access class orientations, tutoring services, on-campus labs, and/or instructor office hours. Student participation and utilization of these services is often disappointing.

The division's response to this dilemma is a "frame of reference." Meaning if the student can't get to the resource, then get the resource to the student. Several instructors have already started to embrace this philosophy.

1) Online instructors will explore more ways to use CC Confer to reach students where they are. Student can attend or participate with minimum effort or inconvenience via CC Confer. Weekly lectures, demonstrations or chat sessions via CC Confer has already shown to be feasible.

2) With the continue implementation of NetLAB online students can get access to their lab environment without every having to visit the campus, if they choose not to. This is analogous to bringing the lab to the student. The Division Vice-Chair will be talking to division instructors to explore how their labs can be deliver via NetLAB. The number of CSIT courses and curriculum now supported by NetLAB means that practically every CSIT course currently offered by the division can be hosted in this environment.

CAOT-Legal secretary program

Overall retention rates for CAOT has been steady maintaining 85% and the success rate has increased and has maintained 83%, this program has formed a cohort with students motivated to complete the requirement andto earn the certificate of achievement in legal secretary. These students are mature and motivated to work hard to achieve their career goals.
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Question:	Compare the successful course completion rates of the Discipline(s) in the Division over time and with the college average. If the rate of any of the Discipline(s) is lower that the college average, what factors contribute to the low rate (s)? What strategies, current or planned, address this? If the rate is higher than the college average, what factors contribute to the higher rates?
Answer:	The overall success rate for the division is 69%, the break-down and explanation are the following: The average success rate for CSIT courses is 56% in Fall 14 and CAOT Legal Secretary is 83% compared to college-wide rate of 63%. One of the contributing factors for low success rate in CS 901 is the lack of funding sources to access required course material like Cengage Bundled textbook. However the success rate of CS901 classes has improved from 48% in Fall13 to 53% in Fall 14. CSIT 67%-Learning Computer Science Topics are tough enough for on campus classes. And if the students do not use the resources that we are providing, then it only makes it harder for them to learn.We have tutors who are on-campus and online, but the number of students taking help of tutors is low. Instructors have recorded classes using CCCconfer, but we see that just a few students watch the video lectures. The success rate CAOT program is 83% -We collaborated with the Paralegal Program in order to facilitate student success in the required courses for our Legal Secretary Certificate. Students in Legal Secretary are mature and motivated pursuing their career goals. Some of the strategies to improve success rates we have been implementing are as follows: The division will be offering a free 3-4 hour basic computer boot camp on using computers on the weekend before semester starts, Windows 7 and file management will be covered plus the following: 1. Make course material relevant and student-friendly during the first three weeks of semester without using the publishe□ s text or software. It should cover the file management, Windows basics, Technology career, Internet security etc. 2. Request free-three-week software access with the publisher while students waiting for the financial aid. 3. Enhance tutoring service and instructor's office hour. For CSIT programs we have updated many course outlines to match current industry standards, due to continued technology advancements. We have also remapped all Certificate roadmaps to better create cohorts of students that successfully complete the course sequence.
Question:	Compare the equity gap in the successful course completion rate(s) in the Discipline(s) over time and with the equity gap of the college over-all. If the equity gap is higher than the college average, what factors contribute to the large gap? What strategies, current or planned, will address this? If the equity gap is lower, what factors contribute to the smaller gap?
Answer:	The overall success rate of our CS901 course (GE elective, 10 Sections) is 53%, CAOT program is 83% and CSIT programs is 67% compared to college-wide rate of 63%. One of the contributing factors for low success rate in CS 901 is that students often cannot afford required course materials, for example, purchasing Cengage text bundle cost $150. Some of the strategies to improve success rates we are planning to implement are as follows: The division

will be offering "CS901 orientation" on the weekend before semester starts, Windows 7 and file management will be covered. Have it be very hands on in the good old Microsoft "tell, show, do" format, plus the following:

1. Make course material relevant and student-friendly during the first three weeks of semester without using the publishe☐ s text or software. It should cover the file management, Windows basics, Technology career, Internet security
etc. The first-three-week material will be developed by CS901 faculty during the Winter session and posted on CS_ETUDES course shell that instructors can copy to their course shell.

2. Request free-three-week software access with the publisher while students waiting for the financial aid.

3. Enhance tutoring service and instructo☐ s office hour. For the CSIT Programs we have updated many course outlines to match current industry standards, due to continued technology advancements. We have also remapped all Certificate road maps to better create cohorts of students that successfully complete the course sequence.The division has been working very hard to help students succeed in completing degree & certificate by doing the following:

1) Provide complete, comprehensive and useful information on the division web site including the required and elective course list of degrees and certificates, road map, course sequence, assigned faculty advisor for each degree/certificate program.

2) Provide course advice, career path consultation and orientation on regular basis by the division chair and faculty advisor.

3) Provide tutoring service to computer science and vocational students.

4) Track each student as they progress through the program.

5) At the end of semester, prepare students in vocational program to take industry certification exam.

6) At the end ofthe program, encourage students to apply for internship. Faculty actively engage with IT industry to establish new internship programs.

Question: Given the data, describe the trends in Degrees and Certificates awarded. What are the implications for your Discipline/Program/Service?
What does the Division do to encourage Certificate and Degree completion?

Answer: The number of degrees and certificates awarded has been growing as new vocational degrees and certificates were in place in 2010. The certificates awarded in 2014-2015 have decreased with combined 65 degree/certificate compared to year 2013-2014 with 91awarded.

The program with the most degree/certificate awardees is Computer Network and Security Management, there are 35 certificates; Legal secretary certificate has 7 students completed the program; 14 students graduated from web and database certificate program; and 11 students from Computer Science Information Technology.

There is a surge of students who are pursuing either a career change to IT fields or to modernize their skills for the the high demand IT job market. These students are focused on getting knowledge and skills in order to quickly join the IT labor force or improve their attractiveness to employers and less likely to pursue associates degrees/certificates or transfer status. We do not see significant number of students completing degree or certificate in Computer Science, as in the case with vocational training, since most of students in this track are pursuing transfer to a four-year University.

The division has been working diligently to help students succeed in completing degree & certificate by doing the following:

1) Update the course outline and programs to better align with industry's standards.

2) Provide complete, comprehensive and useful information on the division web site including the required

and elective courselist of degrees and certificates, road map, course sequence, assigned faculty advisor for each degree/certificate program, faculty contact and availability.

3) Provide course advice, career path consultation and orientation on regular basis by the division chair & the faculty, for year 2014-2015, more than 100 students have benefited from this counseling service.

4) Provide tutoring service to computer science and vocational students.

5) At the end of semester, prepare students in vocational programto take industry certification exam.

6) At the end of the program, encourage students to apply for internship. Faculty actively engage with IT industry to establish new internship programs.

7) The CS division has established academic alliance with Microsoft, CISCO, CompTIA, Oracle, Apple and VMware, these tech leaders have provided free tech resources to faculty and students.

CAOT-Legal Secretary

According to the Bureau of Labor Statistics, the job outlook is excellent for legal secretaries. Secretaries and Administrative Assistants, which also enroll in our program, are projected to have job opportunities 12% faster than average. The Legal Secretarl s growth category is 17% faster.   Our certificates for 2012/13 totaled 12; 2013/14 totaled 19. While complete numbers are not available for all of 2014/15 which total 7 at this time, we can increase student success by devoting time to advising students on petitions and course sequencing. Student participation is also increased through the closely-aligned paralegal program. As a result of the collaboration, CAOT 93, Legal Document Production, an ABA requirement, is part of the paralegal curriculum. PL 10, Introduction to Law and Legal Profession, is part of the legal secretary certificate. Computing application skills in the legal industry is a necessary and mandatory skill.

Module: Staffing Trends

Question: Describe the trends in FTEF. What are the implications for your program?

Answer: CSIT

FTEF has been ranged between 8 and 10 for the past five years. The CSIT is requesting an additional networking instructor who can support the expansion of the various programs. In particular, this instructor would help to develop new classes and curriculum for the Cisco Network Academy, Linux, Network Security, and VMware IT Academy.

Currently, there are only 1.5 full-time instructors available to teach courses related to these training programs. The division chair currently teaches two of thecourses and the division vice-chair teaches the remainder of these courses. The chair and vice-chair, due on-going college and division level responsibilities, cannot take on the additional responsibilities of expanding these programs.

An additional consideration is that the CSIT Division is vulnerable in the sense that so few instructors are teaching the majority of these classes. The division needs to have additional expertise in these areas in the event one or more of these instructors leaves the division or retires. Adjuncts cannot be expected to contribute the level of commitment needed for program development and implementation.

Specifically, the following curriculum expansion is needed and will require at least 1-2 full time faculty.

1)CiscoNetworking Academy-plan to add four new courses

2)Expand the Cisco Academy to support the new Cisco security course,like Network Security.

3) Establish the Palo Alto Network Academy-create a dedicated Firewall course based on Palo Alto Networktechnology

4)Linux: The division needs a full-time instructor to support this direction

5)VMware IT Academy: Cloud service provider course based on Amazon and Microsoft

CAOT

CAOT full time faculty Clyde Titus has retired leaving the CAOT program without full time faculty, the division will need a full time faculty to lead our legal secretary program and to better commit student engagement and student success.

There is currently, no full time faculty serving the needs of the CAOT students. The CAOT area is staffed by adjunct faculty, a full-time instructor will provide consistent mentoring, training and guidance which will increase the number of certificates. Also, this will ensure that students have the appropriate technology skills to function in the legal environment.   To keep current with the industry standards, stability in our instruction is paramount to student success. Consistent quality instruction is required.

According the Bureau of Labor Statistics, the job outlook is excellent for legal secretaries. Secretaries and Administrative Assistants, which also enroll in our program, are projected to have job opportunities 12% faster than average. The Legal Secretar⌐s growth category is 17% faster.

Question:	Are staffing levels adequate to fulfill the purpose of the Discipline/Program/Service? Explain.
Answer:	CSIT

Currently, there are only 2 full time faculty members teaching three Network & Security degree/certificate programs. Although, Anna Chiang is a full-time faculty member; 0.4 reassigned time to assume chair responsibility lowers the full-time faculty count to 1.6. The majority of Computer Application classes are taught by adjunct faculty members. The division wishes to increase the student to full-time faculty ratio.

The CSIT is requesting an additional networking instructor who can support the expansion of the various programs. In particular, this instructor would help to develop new classes and curriculum for the Cisco Network Academy, Linux, Network Security, and VMware IT Academy.

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Question:	elease/reassigned time.Describe the Reassigned and Release time assigned to faculty in the division. Include the faculty name, amount of release/reassigned time, length of time the assignment will last (one semester, one year, if it's renewable, etc.), and the purpose of the r
Answer:	Anna Chiang-division chair- released time is 0.4 to

1. Assume the responsibility of chairing the division of Computer Science and Application.
2. Manage five CE computer laboratories (CE101, 103, 104, 105A and CE225).
3. Chairing Advisory Committee.
4.VTEA manager
5. Provide course advice and career path consultation to college students and community members.

Marcus Butler-released time is 0.2

1. Co-chairing Technology Committee.
2. Design, Manage and Maintain CS Netlab data center.
3. Collaboratingand sharing NetLab resources with local high schools (Culver High) and LACCD sister colleges. (Pierce College).

Module: Functions and Services, Academic Divisions

Question:	List the functions and services provided by the Office / Program / Service.
Answer:	The division offers instruction to students who intend to obtain an associate's degree, transfer to a 4-year university, gain industry certification, or update their technical skill set to compete or function more effectively in the workplace.

The Computer Science and application division has provided the following four functions:

The first is to prepare students majoring in Computer Science for transfer to four-year universities.

Second, deliver career Information Technology oriented vocational training.

Third, support paralegal and office technology students learning word processing and office automation technology.

Forth, offer computer literacy course for students to fulfill general education requirement. T

hese goals are supported by the division offering of degrees, certification and certificates. Our programs include degree and certificates in the following tracks: Computer Science Information Technology, Business Applications & Database Management, Computer Network & Security Management, Web Development & Administration and Legal Secretary.

Question:	What are the emerging trends in technology that affect the program?
Answer:	Virtualization, cloud computing, network security, and the increase use of mobile devices has and will continue to impact the division in numerous ways. Cell phones, laptops, and tablet computers has and will impact what programming courses will be offered and how those classes are taught.

Mobile devices are also creating demand for wireless technicians being capable of designing, installing and troubleshooting wireless networks. We currently do not offer any courses specifically addressing those needs. Development of a wireless course is being considered.

Virtualization technology is another in-demand technology due to significant cost saving afforded to those who implement it. Companies that implement virtualization technology enjoy lower energy cost, reduce administration cost, and lower capital expenditure. To address this growing demand, the CS Division has developed and started offering VMware virtualization technology courses in fall 2015 .

Companies are expecting each employee who has responsibility for the computer network to be knowledgeable about network security and the latest advancements in network security. This expectation put pressure on the division to constantly update the Computer Networking and Security curriculum. The

divisionwill be requesting funding to implement Cisco Firewall hardware to support the security curriculum.

There is a huge demand for Ruby on Rails web developers from companies such as: Amazon, BBC, CISCO, IBM,JP Morgan, NASA, Yahoo, etc.
By the Year 2022, demand for Web Developers is expected to increase by 31.6 % in California and 20.1% across the entire US. The state data is supplied by California Employment Development Department, and US is data is from Bureau of Labor Statistics.

Question:	Describe the technological advances that have been implemented to improve and streamline the Discipline/ Program/Service.
Answer:	

1) Virtualization technology is an in-demand technology due to significant cost saving afforded to those who implement it. Companies that implement virtualization technology enjoy lower energy cost, reduce administration cost, and lower capital expenditure. To address this growing demand, the CS Division has developed and started offering VMware virtualization technology courses in fall 2015, proposed certificate of achievement is in the process of getting approved.

2) Companies are expecting each employee who has responsibility for the computer network to be knowledgeable about network security and the latest advancements in network security. This expectation put pressure on the division to constantly update the Computer Networking and Security curriculum. The division will be requesting funding to implement Cisco Firewall hardware to support the security curriculum. There is a huge demand for Ruby on Rails web developers from companies such as: Amazon, BBC, CISCO, IBM,JP Morgan, NASA, Yahoo, etc. By the Year 2022, demand for Web Developers is expected to increase by 31.6 % in California and 20.1% across the entire US. The state data is supplied by California Employment Development Department, and US is data is from Bureau of Labor Statistics. Thedivision has incorporated Ruby on Rails in our web development curriculum to starting summer 2015.

3)The CS Division has incorporated NetLAB to deliver many of its vocational training curriculum. NetLAB is one of the most advanced way to deliver IT training. West is one of the few colleges that was an early adopter. This technology has allowed the division to lower its IT training cost significantly.

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Module: Survey Results

Question:	Describe the results of relevant surveys (point-of-service surveys, student surveys, staff surveys).
Answer:	In Spring 2015, student survey was conducted at the program level:

For programming courses- 70% students have agreed that programming courses have prepared them to solve real world problems; 80% students agreed that they have learned about algorithm, creating flow chart and program login.

For CS application course-38% of students want to transfer, 33% of students pursuing transfer and another 38% are for GE, 77% of students rate CS tutoring service to be available and helpful, 81% of students rate computer classroom adequate to compete coursework.

Since only 62% of students said that the instructors guide students to next step after CS901,starting Spring 2015 the division chair and faculty members have been visiting classes and talk to students to guide students the course sequence for each degree and certificate program that the division offers.

Fall 2014 Student Surveys were conducted at the division level. 519 students from CSIT, CAOT and CS901 were polled. The following survey highlights were of interest to the division:

-Education goals: 52% of students are pursuing degree, transfer and certificate, 26% are updating job skills. -Employment-71% of students are not working only 28% are working

-Reason to take class at West-88% because of programs and courses -Schedule-51% students are in favor of evening class and 47% in favor of on-line class

-course offering-93% students agree that the course offering meet their career and educational objectives. -

Prerequisite-75% students agree that course prerequisite help them in completing advanced courses -

Tutoring service-61% students are not aware of tutoring service that our division offers.
-Tutoring service-67% agree that the tutoring service is available and helpful
-Faculty advisor-50%students are aware of faculty advisory, 48 % are not aware.
-Division web Site-73% students have visited the division web site and have found useful information
-Road map-70% students are aware the degree and certificate road map are posted on the division web site.

Question:	Discuss the implications of the survey results for the program.

Answer:　　In Spring 2015, student survey was conducted at the program level:

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Module:　Curriculum

Question:	I assistance that may be needed to resolve the problem.Missing course outlines of record: Refer to the report of courses with missing CORs, which is posted at the link in the Instructions section. Please describe the steps the division has taken or plans to take to correct the problem. Describe the additiona

Answer:　　The division has archived several courses which have not been offered for more than 2 years. The division has also updated all courses outline through ECD process and to assure every course has a current and up-to-date course outline of record.

Question:	Out-of-date course outlines of record: Refer to the report of courses with CORs that are out-of-date. Please describe the steps the division has taken or plans to take to correct the problem.
Answer:	In order to keep up with the IT industry, the division has been updating the course outline on regular basis. Anna Chiang is the division representative in Curriculum Committee. The division is in the process of updating course outline through ECD process and assuring every course has a current and up-to-date course outline of record.

Updating course outline through ECD process is a lengthy process, it could take more than 6 months to complete the process and see the updated course outline approved & uploaded in Distric▼ s ECD database. We would like to see if the ten-signatures can be eliminated to five-signatures in the near future. |
| **Question:** | How does the department determine that classes are taught consistently with the official course outline of record? |
| **Answer:** | The official course outline of record is stored in ECD and is accessible through LACCD portal, every instructor in the division has been required to update the course outline on regular basis. Every instructor must meet with the division chair the week before the semester starts, to discuss the contents of the course syllabus including course objectives, student learning outcome, assessment methods, and weekly scheduled topics to determine that classes are taught consistently with the official course outline of record.

At of fall 2015, all CSIT and CAOT course outline of records in ECD has been updated and submitted to Curriculum Committee, even the division has updated and corrected TOP code and SAM code for more than a year, the CTE core indicator report from the State has not been updated.

Updating course outline through ECD process is a lengthy process, it could take more than 6 months to complete the process and see the updated course outline approved & uploaded in Distric▼ s ECD database, the District then needs to upload to the State course database, we have not seen the TOP Code and SAM code getting updated in the State course database yet. |
| **Question:** | Are required courses scheduled in appropriate sequence to permit students to complete the program in the prescribed program length?
If yes, describe the rationale upon which the sequence is based.
If no, what is the plan for alleviating these problems?Explain. |
| **Answer:** | The division has developed the course sequence and road map for the following degree/certificate of achievement, they are incorporated in the college catalogue and posted on the division web site.

    1. Computer Science Information Technology degree and certificate
    2. Computer Network and Security Management degree and certificate
    3. Web Support and Database Management degree and certificate
    4. Computer Application Office Technology degree and certificate
    5. Legal Secretary Certificate of Achievement

Degree and vocational programs are structured, such that any student can complete their coursework within two-years. Students pursuing two-year degrees can also complete their coursework within two years.

Vocational programs are structured for one-year andtwo-year tracks. The degree and certificate road map and course sequence were developed, reviewed and approved by the division and Academic Affairs as a reference for class scheduling. They are posted on the division web site as a guideline for students to lay out their educational plan.

The required and introductory-level courses are offered every semester; advanced and elective courses are offered every other semester. All required courses are offered at least once during the academic year to assure a student never waits more than one semester for a required course.

When budget permits, additional required courses are offered during the summer to assist acceleration and curriculum diversity. Our course structure permits students to start most of programs either in spring or fall semester. |
| **Question:** | How does your division assure the relevance, appropriateness and currency of each of its programs? |

Cite each program (degree/certificate program or meaningful grouping of courses)
and the student data and environmental scan data that support the assertions.

Answer: Our division assures the relevance, appropriateness and currency of each of our program by updating the curriculum, developing and creating new programs in the following areas. Our faculty keep current with the industry standards, consistent quality instruction is required.

1) Degree and Certificate track #1-Network and Security Management: this program focuses on the following IT certification training: CISCO, Apple, Microsoft, VMware, CompTIA A+, Network+ and Security+. For the past decade, the division has joined the academic alliance with CISCO, Microsoft and VMware. Partnering with these tech leaders provides extensive resources, training and support to our faculty and students at almost no cost. The division has also developed and proposed a new certificate of achievement called "Virtualization and Cloud Computing Administration" with four new courses, these four new courses have been approved by the State and we have started offering course in fall 2015.

Between year 2014 to 2015, there are 19 students passed CompTIA A+, Network+ ,Security+ certification exam; 6 students passed CISCO certification exam; 2 students passed VMware, 26 students have passed PC PRO certification exam, 9 students passed Network PRO and 5 passed Security PRO.

2) Degree and Certificate track #2-Computer Science track helps students transfer to 4-year university majoring in Computer Science and Engineering, there are 5 students transferring to CSULA, CSUDH, CSUN and UCIrvine this year.

As smartphones become the norm, more and more business activities are shifting to smartphones. Majority of corporations today have developed applications to allow their customers to access their services and products through smartphones. Smartphone applications have also become pointof sales for many corporations. There is a rush to develop mobile applications so that the consumers can access services/ products from anywhere/anytime. This rush has created a lot of job opportunities for students who have the ability to develop mobileapplications. West Los Angeles College wants to tap into this student market and help the students learn mobile application development so that they can succeed in their career and educational goals.

The division has developed and proposed the certificate of achievement in "mobile application development" to prepare students for developing mobile application for popular platforms such as Android and Apple IOS. This certificate has been approved by the Curriculum Committee and it is in the process of getting approved by regional consortium.

3) Degree and certificate track #3-Web support and database management. After conducting industry research on the prevalence of Visual Basic, we updated CS 938 to incorporate more Web Development Technologies. Withthe update of CS 938 (Web Development), we have updated the course sequence for the Web Design, Development & Web Service Support Degree and Certificate program.

The start of the sequence introduces students to the two branches of application development - Desktop and Web based (CS902, CS938). With CS 938 students are prepared for the following Web technologies: HTML, CSS, Python, JavaScript, and PHP and subsequently higher level classes.

4) Certificate of Achievement-Legal secretary-The division supports paralegal and office technology students learning word processing and office automation technology. The retention rate has been maintained with 84% for the past years, and success rate been 83% much higher the division and college average. The faculty will ensure that students have the appropriate technology skills to function in the legal environment. Our faculty keep current with the industry standards, consistent quality instruction is required.

Our certificates for 2012/13 totaled 12; 2013/14 totaled 19. While complete numbers are not available for all of 2014/15 which total 7 at this time, we can increase student success by devoting time to advising students on petitions and course sequencing. Student participation is also increased throughthe closely-aligned paralegal program. As a result of the collaboration, CAOT 93, Legal Document Production, an ABA requirement, is part of the paralegal curriculum. PL 10, Introduction to Law and Legal Profession, is part of the legal secretary certificate. Computing application skills in the legal industry is a necessary and mandatory skill.

Question:	ybrid classes? How can the outreach, online and hybrid classes be improved?What outreach, online and hybrid classes has your department offered? How many courses are offered via Distance Education, and for how many has a COR addendum for DE been prepared? What are the benefits and problems associated with outreach, online and h
Answer:	The division has reached out two high schools by offering on-site Computer Science class or sharing the division NetLab virtualization curriculum resources: 1) Offering CS902 to students in Academy of Science and Engineering Fall 2015 2) Support and share the division virtualization resource (NetLab) to Culver High school Fall 2015. Since a significant percentage of students participating in our programs are working adults, our core courses are offered in a hybrid format and during the evening, weekend, and on-line. The goal is to improve class availability and accessibility. For example we adopted a new online model for teaching programming classes. The class had many online lectures and lab sessions, scheduled through CCCConfer webinar system. Student feedback on this new approach was very favorable and many students asked for more online courses to be offered in the same format. Since 2014 hybrid classes have demonstrated better student retention rates and student success rates. We plan to incorporate more hybrid and online coursed using CCCConfer webinar based approach. In order to help students succeed in completing Computer Science courses, the division has offered CS courses by alternating between on-line and on-campus. On-line can reach distant students while hybrid classes allow local students to have more direct interaction with the instructors.
Question:	Describe any long term changes or additions to the curriculum that you are exploring, planning or developing. Changes that you plan to initiate in the coming year should be reflected in the Planning Section.

Answer:	The division has proposed the following two certification of achievement, one is mobile application development and the other is virtualization and cloud computing administration.
	
	1)MOBILE APPLICATION DEVELOPMENT
	
	This certificate of achievement in mobile application development is primarily designed for vocational educational and workforce training and development. This curriculum prepares students for developing mobile application for popular platforms such as Android and Apple IOS.
	Program SLO:
	Uponcompletion of this program, students will:
	  Design and Develop, implement various mobile applications for platforms such as Android and IOS.
	  Understand how to design various screens, navigation between the screen, events and event handling, database accessing for a mobile application.
	 Deploy the mobile applications to mobile app stores.
	 Develop mobile applications that use the hardware features of devices such as GPS, cameras, etc.
	
	2)VIRTUALIZATION AND CLOUD COMPUTING ADMINISTRATION
	
	In order to improve student employment readiness, the division has developed and proposed four-course cloud and virtualization training program and corresponding college certificate. The training will prepare students to take the VCP5-DCV and VCP5-DT certification exams offered by VMware Corporation. Course Sequence
	
	CS972 Cisco/ CS973 Virtualization and Cloud Computing Essentials (take concurrently)
	
	CS975 Infrastructure Storage and Management for Computer Networks/ CS982 Server (take concurrently)

CS976 VSphere Install, Configure and Management

CS977 Implementing Virtual Desktop Infrastructure

Course Format

The VMware courses at West are offered in a Hybrid format. There are weekly lectures and weekly labs students are expected to complete online. The ICM 5.xlabs are delivered using NetLAB technology. The goal is to help student prepare for the VCP5 certification and compete for high in-demand jobs related to supporting virtualization technology. In fact, the VCP5 certification is one the most in-demand industry certifications. A recent study determined the VCP5 is one of the top 12 industry certification

CAOT- Legal Secretary

Computer Information System literacy course CS901 will become part of Legal Secretary curriculum, CS901 covers word processing, spread sheet, presentation and database management. Students in CAOT or Legal Secretary program should possess these office automation skills to improve their employment readiness.

Question:	List new or changed degrees and certificates that have been approved by the Curriculum Committee during the previous year, or are in the planning stages.

Program Name	Award Type	Curr Comm Action	Date of CC of Action	Type of CC Action
Mobile Application Development	Certificate	Approve	Oct 2015	New Program
Virtualization and Cloud Computing Administration	Certificate	Approve	March 2015	New Program

Module: Student Learning Outcomes

Question:	Describe how course SLOs were assessed and how faculty were involved in the process in the prior year.

Answer: This year our SLO facilitator has been instrumental in bringing the division into compliance with the SLO assessment requirements. Using the calendar, each instructor is to find the course they taught and complete the SLO forms. The assessment reports are sent to SLO facilitator and the Department chair for review and then forwarded to SLO submit email address.

The assessment methods include sample test questions and assignments from each course that measure specific Student Learning Outcomes. So far we are at 90% completion of all course assessments defined in the SLO calendar for Fall 2014 and 60% completion for Spring 2015. All instructors are required to assess their courses taught during the Fall 2014 and Spring 2015 semesters. The facilitator has conducted many SLO workshops during division meetings and on Saturdals to accommodate adjunct instructors.

Question:	Based on course SLO assessments in the prior year, what changes to the course were implemented? List the changes to each course that were made based on SLO assessments.

Answer: SLO Course Changes List

CS 902 course objective and student learning outcome was updated, textbook was changed and sequence for CS degree tract was modified to include CS 938.

CS 938 curriculum was changed and now includes introduction to C++ in-order to increase student success.

CS 901 - course objective and student learning outcome was updated, textbook was changed too.

CS 933 - Online course material was established to facilitate online instruction.

CS 958 - NetLab was utilized to facilitate more students access to the computer environment required for this class.

CS 988 - NetLab was utilized to facilitate more students access to the computer environment required for this class.

CS985 -NetLab virtualized lab exercises was utilized to enhance the computer security concept.

CAOT79- Increase hands-on lab exercises.

Other courses' changes have a component that increases the hands-on lab and amount of in-class lab time for students.

Question:	Based on any of the following assessment methods:
	    a. course SLO assessment;
	    b. analysis of course sequencing;
	    c. indirect assessment indicators such as state exams or employer surveys;
	    d. student success data such as retention, successrates, degrees/certificates awarded
	what changes to the program are planned or being implemented?

Answer:	Our Network and Security program courses like CS934 and CS916 will have the certification exam as the final exam, in spring 2015 there are 70% of CS934/916 students passed PC PRO certification exam, this will boost students' job readiness to enter the field of Information Technology. Computer Science- The course objectives, course outline will align with UC/CSU and will seek more course articulation agreement with UC and CSU, this would need the support from college articulation officer. Web and database program- will use CS937 as capstone final projects course that encapsulates all the skills studies in the program. After conducting industry research on the prevalence of Visual Basic, we updated CS 938 to incorporate more web development technologies.With the update of CS 938 (Web Development), we have updated the course sequence for the Web Design, Development & Web Support Degree and Certificate program. The start of the sequence introduces students to the two branches of application development - Desktop and Web based (CS938). With CS 938 students are prepared for the following Web technologies: HTML, CSS, Python, JavaScript, and PHP and subsequently higher level classes. Legal secretary program - meet with advisory board members to assess needsof legal community to ensure up-to-date methods are used and skills sets are relevant.
Question:	Will these planned changes based on Program SLO assessment necessitate a resource request?
Answer:	Yes for the Computer Science transfer and course articulation, we will need the college articulation officers to take more proactive approach to help us have more courses articulated with UC/CSU. For Network Security and Database Curriculum- we need to move more courses into the NetLab environment, and additional memory and storage will be required to assure satisfactory performance. Additional hardware (Servers, Newer Workstations & Memory) is needed for many of the advanced courses, specifically thoseusing the new Netlab environment. The following requests were garnered from discussion with instructors and recently conducted student survey. 1. Hire another full time instructor that will concentrate on course development and student engagement. 2. Due to the request for more evening and weekend courses, there are not enough computer classrooms or labs to accommodate increased demand for these vocation courses. 3. A need to expand the NetLAB environment to be able offer more online labs providing students with better access and more lab time. Also, the ability to repeat labs multiple times results in better SLO outcomes.

Question: How has faculty dialogue regarding assessment results and improvement plans been conducted and documented?

Answer: SLO dialogues have result in the followings implementations:

1. The division will continue to request tutors to provide tutoring service for computer science and network security and CISCO students.

2. The division needs to identify more tutors for CS901 students.

3. CAOT Legal secretary program will move from Office 2010 to Office 2013 to help students learn the most up-to-date office technology.

4. CS has developed and implemented the following strategies:

-Hold orientation the week before semester starts.
-Work on course to course articulation agreement with UC and CSU.
-Update course outlines to stay current with ever-changing IT industry.
-Assign a faculty adviser to each student who has declared a major with our division.
-Enforce prerequisite for advanced courses.
-Faculty SLO course assessment dialogue for instructors teaching the same course at the monthly Division Meeting.

Full time and adjunct faculty meet once a month in a Division meeting. Minutes and emails are the primary documentation methods. These facilitate distribution to all faculty. Whenever there is a change to curriculum affected faculty meet and adjust the delivery methods to facilitate the changes.

Many instructors want to emphasize the importance of hands-on experiences and in-class lab time,we have seen one very strong characteristics of all capable IT personnel owned is strong hands-on, people with hands-on experience have confidence to their jobs. That's why our classes emphasize getting students hands-on experience.

The division faculty members meet on regular basis to standardize curriculum and implementation. The division faculty members also meets with advisory board members to assess needs of IT community to ensure up-to-date methods are used and skills sets are relevant.

Module: Departmental Engagement

Question: What interdepartmental collaboration has your Discipline/Program/Service been involved in during the past six years?

Answer: The division has been or will be working the following interdepartmental collaboration:

1) The division is working with Business department to propose a new certificate of achievement called "E-commerce Web Technology" which will allow students in web design & development track to work together with students in Business department.

2) The division will be working with Aviation department to develop a curriculum called "Unmanned Aerial System" to fulfill Base 11 grant project.
This program prepares students for careers as operators and/or coordinators of Unmanned Aerial Vehicles (UAV), also known as drone▲ .

3) The division has incorporated with Paralegal program to offer the certificate of achievement in "Legal Secretary Certificate", it was approved by the State Chancellor since year 2009. This program supports paralegal students to learn word processing and the most up-to-date office automation technology.

4) Our web design certificate will allow students to take one course from the areas of Digital Art or Multimedia, this provides flexibility for students
who want to combine computer technology and art skills in the digital era.

5) The division provides a number of shared computing resources for the various instructional programs, the division houses six computer classrooms. The division is the primary user of these computer facilities, the other department like, Allied Health, Pharmacy, Accounting, and Tech Fair are the secondary users.

6) Our faculty Ken Taira and Manish Patel have heldnumerous workshops for college faculty & staff through Tech Fair.

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Question:	What has your Division/ Department/ Program done since the last review to establish connections with schools, institutions, organizations, businesses, and corporations in the community?
Answer:	The division has reached out the following high schools, colleges, local organizations and businesses: 1) Offering CS902 at local charter school called "Academy of Science & Engineering" in Fall 2015. 2) Supporting Pierce College's CISCO CCNA security program by sharing our Netlab virtualization technology resources. 3) Supporting Culver High School CISCO IT Essentials by sharing our NetLab lab resources. 4) The division has established an internship program with the City of Los Angeles. This internship program allows students to acquire real world industry experience. The internship is with the Department of Transportation, Information Systems Division. The students get a chance to work with real IT professionals on advanced computer systems in the field of ASP.NET programming, SQL Server, and Oracle databases. This year 4 students were placed in this internship program 5) The division has also established an internship program with a local corporation. This corporation offers summer internship positions at their headquarters location in El Segundo. The internships are designed to give students the opportunity to work in scientific, technical, or administrative areas of the company. Recently two WLAC students were hired as Interns in the information Technology Department. 6) The division has also established connections with the following organization as Academic Alliance member, the benefits are that instructors and students can access numerous technology resources and course material at no cost or low cost. Microsoft Academic Alliance CISCO Networking Academic Alliance, Oracle Database Academic Alliance, Computer Technology Industry Association CompTIA A+, Network+, Security+ Linux+, Apple University Alliance, VMware IT Academy alliance. 7)The division chair responds to inquires from local community regarding CS programs by offering course advice and career path consultation, dozens of community members have benefited from this service on yearly basis.

Module: Professional Development

Question:	In order to keep current with new developments in your field, are there areas of unmet professional development needs among faculty in this program? If yes, please describe.
Answer:	This constantly changing environment requires instructors to commit to frequent training. This burden is unique to this industry. Neither the college nor the district provides any adequate mechanism that allowed technology instructors to stay current. Essentially, instructors have to commit their own resources and time to maintain relevancy and deliver courses or training based on current, acceptable technologies. This is a significant problem.However, many of CS faculty members have used their own resources and time to engage in the following professional development activities: Yuen Yuen - Microsoft Azure in year 2015 Ashok Patil Learning about Android Development and MVC web application develoment Anna Chiang-Palo Alto Firewalls Summer 2015 Ruby Kowaney attended the following professional development activities Summer 2015: Digital Media Educator's Conference, Santa Clarita, CA June 11-12, 2015 Regularly attend California Business Education Association annual conferences.

Al Kami attended the following professional development training1. Sept 14-18 - EMC ISMv2 course training through CSSIA and MPICT Summer 2015 Faculty Development Week, San Francisco, CA June 22-26, 2015 - Netlabs training

Parvaneh Ghforyfard-Institute for Biomedical Therapeutics (IBT) and Biomimetic and 2015 STEM in education conference at CSU DH.

Bill Williams-Vmworld technical conference on virtualization of Linux servers and Mac computers Manish Patel- attended the following professional development events: Windows 10 deployment workshop, Ruby on Rails BATEC summer workshop, Microsoft Azure workshop.
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Question:	For each regular full-time faculty member in your program, provide the committees in which each person is active, and list the 2 most significant professional development activities engaged in over the last 2 years. Activities may include workshop and conference attendance, courses taken, FTLA, Leadership Institute, etc. Committee roles may include chair, secretary, member, etc.

1 Faculty Name	4 First Prof Dev Activity	5 Year First PD Activity	6 Second Prof Dev Activity	7 Year Second PD Activity	
Anna Chiang	Curriculum committee	contributing member	Computer security training	2013	
Marcus Butler	Technology Committee	co-chair	VMware	2013	

Ashok Patil	Technology Committee	committee member	Mobile development	2013
Manish Patel	SLO committee	SLO facilitator	Microsoft Azure	2013
Parvaneh Ghaforyfard	Computer Science Club	sponsoring faculty	USC Bio research	2013

Module: Facilities

Question: List and describe any current facilities challenges (e.g., location, quantity, quality) affecting your division/ department's ability to achieve its goals and meet instructional needs.

Answer: Computer Science and Application Division is expected to remain in the older CE Building for at least 5 more years. The facility used to support the classrooms is at its end-of-lif❋ and incapacity of supporting the new demands that will be placed on our environment in the very near future.

Currently, CE103, CE104, and CE105 networking infrastructures are grossly inadequate to support current and future courses. Current connecting devices and cabling is old and dangerous.

 Data Center Requests:

Purchase shared storage technology (iSCSI SAN)
        Will lower future storage cost
        Reduced datacenter management cost
        Increased datacenter performance and capacity
        Allows for protection of student data and disaster recovery.

Classroom/Lab Requests:

    Install new switching hardware in CE101
    Install new tile flooring
    Upgrade CE103a and CE105a to Smart Classroom standards
    Install new Intermediate Distribution Facilities (IDF) in CE103, CE104, and CE105
      Standard industry approach for connecting classrooms
    Purchase thin-clients to support current, new, and future technologies

CSIT Division has implemented its own Data Center (DC) in CE105B to support online and on-campus courses. The DC was necessary to facilitate a technology shift in terms of how students will be performing their computer lab assignments. This new approach enables students to be able to perform their labs or lab assignments 24/7 either on campus or anywhere a student has Internet access. This flexible access to lab environments will provide significantly more hands-on access time. Online and disabled students will benefit tremendously.

Question: Specify the division/ department's short term goals (1 year) for facilities improvement and functionality.

Answer: The CS Division is expected to remain in the older CE Building for at least 5 more years. The hardware used to support the classrooms is at its end-of-lif☀ and incapacity of supporting the new demands that will be placed on our environment in the verynear future.

Currently, CE103, CE104, and CE105 networking infrastructures are grossly inadequate to support current and future courses. Current connecting devices and cabling is old and dangerous.

The CS division is requesting to upgrade the following computer classrooms:

    1) Install new tile flooring in CE101
    2) Upgrade CE103A and CE105A to the basic Smart Classroom standards
    3) Install new switching hardware in CE101.
    4) Remodel and rededicate the use of CE101 with the following justification:

The Computer Science Division also proposes to change the purpose of two of its rooms in the next year. Currently, CE 101 has several uses: (i) it is an open lab in the afternoon, (ii) it is a lab on Saturdays for the A+ hardware course, (iii) it is the location for a rack of switches that connect computers to the network, and (iv) it is the location of the CS Instructional Assistant. CE 104 is connected by a door to CE 101 and is a smaller classroom.

As a result of several discussions over the last year involving Computer Science, Science, Aviation, and Base 11, a nonprofit 501(c)3 organization with a strong interest in supporting STEM, engineering, and entrepreneurial education, the Computer Science faculty propose to rededicate the use of CE 101 to support the implementation of a Fab Lab. The Fab Lab concept is supported by the chairs of Science and Aviation.

The lab function of CE 101 can be accommodated in the Library and we will move the current several computers there. The CS Instructional Assistant will be moved into CE 104 where he can still view activities in CE 101. The rack of switches can remain where they are as they are relatively isolated. The

new use will allow CE 101 to be used on Saturdays for the A+ hardware course.

From the Fab Foundatio■ s web site: Fab Lab is the educational outreach component of MI✳ s Center for Bits and Atoms (CBA), an extension of its research into digital fabrication and computation. A Fab Lab is a technical prototyping platform for innovation and invention, providing stimulus for local entrepreneurship. A Fab Lab is also a platform for learning and innovation: a place to play, to create, to learn, to mentor, to invent. To be a Fab Lab means connecting to a global community of learners, educators, technologists, researchers, makers and innovator▲ a knowledge sharing network that spans 30 countries and 24 time zones. Because all Fab Labs share common tools and processes, the program is building a global network, a distributed laboratory for research and invention✎

Question:	Specify the division/ department's long term goals (2-6 years) for facilities improvement and functionality.
Answer:	The division's long term goal is to move into TLC building. The TLC (Technology Learning Center) is being designed to allow the division to deliver Computer Science Information Technology courses and programs. The division continues to meet with the building architect and has submitted an updated "building programming survey" which included the following instructional space requirements:

One specialized computer lab open to students with 50 workstations and
Six highly specialized computer classrooms for the following program and classes:
1. CISCO lab computer classroom with 50 computer stations plus 10 sets of switches and routers.
2. Microsoft and Oracle database computer classroom with 50 computer stations.
3. VMware computer classroom with 50 computer stations plus additional 4 of rack-mount servers
4. Apple and Linux computer classroom with 50 Apple computer stations.
5. Computer programming, Web design and development computer classroom with 50 computer stations.
6. Computer Hardware classroom with 50 computer stations
7. Dedicated server and network room (Main and Intermediate Distribution Facility).

Module: CTE Programs

Question:	Does this Division offer any CTE programs? IF THE ANSWER IS 'NO' SKIP THE SECTION ABOUT CTE PROGRAMS, AND GO ON TO THE PLANNING SECTIONS.
Answer:	Yes

Question:	Review labor market demand. How does your program meet labor market demand? Cite specific examples and sources.
Answer:	CSIT

With companies scrambling to build mobile apps, there's a gold rush on for developers willing to retool their technical skills and adopt a new design mind-set. As market demand surges for apps to run on iOS, Android and whatever operating system will power the next wave of smart devices, companies are facing a dearth of mobile development talent. For IT professionals with programming skills, that gap represents a fresh opportunity to embark on a career makeover.

To put the demand in perspective, consider that Apple racked up $1.78 billion in app sales in 2010, and global mobile app sales are forecast to hit $4 billion this year, according to market researcher IHS. Just who is developing all of those apps? In its recent "America's Tech Talent Crunch" study, IT job site Dice. com found that job postings for Android developers soared 302% in the first quarter of this year compared to the first quarter of 2010; ads for iPhone-related positions rose 220% in the same time frame.

Elance.com, a website for freelancers, reports comparable demand: In the first quarter of 2011, there were 4,500 mobile developer jobs posted on the site -- an increase of 101% over the number of similar job postings in the same quarter last year.

While there are ample pools of Web and Java development talent, professionals with expertise building native apps for Apple's iPhone or iPad, or for the BlackBerry or any of the newer Android devices, are in short supply because of the relative newness of those platforms.
Quick Facts: Software Developers 2012 Median Pay $93,350 per year $44.88 per hour

According to EMS (Economic Modeling Specialist Inc., the fastest growing occupations in the area of Computer Information Technology up to 2020 are the following:

1) InformationSecurity Analysts 40.2%
2) Web developer 31.6 %
3) Computer System Analysts 27%
4) Computer User Support Specialist 25.2%
5) Computer Network Architects 23.6%
6) Network and Computer System Administrators 17%

In addition, there is a huge demand for web developers (Ruby on Rails) from companies such as Amazon, BBC, CISCO, CNET, IBM,JP Morgan, NASA and Yahoo. By the Year 2022, demand for Web Developers is expected to increase by 31.6 % in California and 20.1% across the entire US. The state data is supplied by California Employment Development Department, and US is data is from Bureau of Labor Statistics.

Our division offers degree and certificate programs that cover almost the entire spectrum of the Information Technology industr▌ s career pathways to meet local busines▲ needs and to provide students with convenient and affordable learning opportunities.

CAOT

According the Bureau of Labor Statistics, the job outlook is excellent for legal secretaries. Secretaries and Administrative Assistants, which also enroll in our program, are projected to have job opportunities 12% faster than average. The Legal Secretar▌ s growth category is 17% faster.   Our certificates for 2012/13 totaled 12; 2013/14 totaled 19. While complete numbers are not available for all of 2014/15 which total 7 at this time, we can increase student success by devoting time to advising students on petitions and course sequencing. Student participation is also increased through the closely-aligned paralegal program.   As a result of the collaboration, CAOT 93, Legal Document Production, an ABA requirement, is part of the paralegal curriculum. PL 10, Introduction to Law and Legal Profession, is part of the legal secretary certificate. Computing application skills in the legal industry is a necessary and mandatory skill.

Question:	Advisory Board Membership. List the member name, company name, title and CTE program for each member.
Answer:	Brent Knox-training manager, CISCO Selwyn Hollins-Manager, dept. of transportation, City of Los Angeles Wayne Jones-web develper Eva Bitar-City of Los Angeles Milan Samplewala-faculty, LA City College Munir Samplewala-faculty, LA City College Ashok Patil-faculty-Computer Science, WLAC Kabwy Chanda-Network Specialist-Los Angeles Valley College Steve Gonsoski-Programmer Analyst-LACCD Michael Stamper-Information Service Manager, Washington State Univ. Larry Wong-Senior Linux engineer Bill Williams-IT Manager Kent Taira-network consultant Manish Patel-Web database architect P Patricia Morris-legal secretary Mimi Wong: legal secretary Marcus Butler: faculty-CISCO, Microsoft, and VMwware, WLAC Clyde Titus: Office application, WLAC nna Chiang: operating system, A+, Network+, Security+, WLAC Yuen Yuen-Software Engineer, Northrop Grumman Anna Hernando-Student representative
Question:	Advisory Board Meetings. List the following information for each meeting held in the last year:

AB Name	Dates	Number Attendees	Minutes
Computer Science and Application	March 21,2015	Yes	21

Question: What have been the major outcomes of your advisory board meetings? Of those outcomes, which have been acted upon, and what is your plan of action with regard to other outcomes discussed?

Answer: CSIT

1) Ruby on Rails was presented to the Advisory Board. The board agreed that this cutting edge web technology should be taught at WLAC.As a result Manish Patel taught Ruby on Rails Summer 2015 as BootCamp. Ruby on rails is the fastest growing web development platform today. There is a huge demand for Ruby on Rails developers from many corporations.

Major sites built with Ruby on Rails: Twitter, Shopify, Groupon, Bloomberg, Airbnb, Hulu and SoundCloud. Ruby on Rails allows students to create complete web application fast and easy.This 6 week Saturday BootCamp got student started and put them on track to developing sophisticated web applications that are tied to a database backend. This will increase their ability to get highly skilled jobs in the Web and Database fields.Additionally CS 958 now included a Ruby on Rails Capstone project.

2) Another outcome is that the committee has agreed that the CSIT Division is vulnerable in the sense that so few instructors are teaching the major degree & certificate track of "Network and Security". The division needs to have additional expertise in these areas. Adjuncts cannot be expected to contribute the level of commitment needed for program development and implementation.Specifically,the following curriculum expansion is needed:

The advisory committee has also advised to add new courses for wireless, VOIP, Unified communication system, CISCO security courses, establishing Palo Alto network academy, Palo Alto is the leading provider of firewall technology.

3) The committee has advised the division to establish a formal Linux Academy, the Linux network operating system is consuming large OS market share and consider the go t☐ solution for many Fortune 500 corporations.The divisionmust address this obvious trend and industry demand, the advisory committee has suggested that the division needs a full-time instructor to support this direction.

CAOT

There is currently, no full time faculty serving the needs of the CAOT students. The CAOT area is staffed by adjunct faculty, a full-time instructor will provide consistent mentoring, training and guidance which will increase the number of certificates. Also, this will ensure that students have the appropriate technology skills to function in the legal environment.   To keep current with the industry standards, stability in our instruction is paramount to student success. The committee has advised to hire a consistent quality instructor for Legal secretary program.

According theBureau of Labor Statistics, the job outlook is excellent for legal secretaries. Secretaries and Administrative Assistants, which also enroll in our program, are projected to have job opportunities 12% faster than average. The Legal Secretаrɪ s growth category is 17% faster.   Our certificates for 2012/13 totaled 12; 2013/14 totaled 19. While complete numbers are not available for all of 2014/15 which total 7 at this time, we can increase student success by devoting time to advising students on petitions and course sequencing. Student participation is also increased through the closely-aligned paralegal program.   As a result of the collaboration, CAOT 93, Legal Document Production, an ABA requirement, is part of the paralegal curriculum. PL 10, Introduction to Law and Legal Profession, is part of the legal secretary certificate. Computing application skills in the legal industry is a necessary and mandatory skill.

Question:	Describe and assess the evidence of students' attainment of intended learning outcomes, as measured by the employment and completion success of its students. [Ed Code 78016(a)(3)]
Answer:	Degree and Certificate awarded and Industry Certification Outcomes Two additional students have interned at the City of Los Angeles this year. We are looking to expand this program to include more students form WLAC. Most government agencies have gone through massive downsizing and are unable to hire full time workers. The internship program benefits both the City and WLAC students. The City can fill some gaps in their workforce and WLAC students receive real-world experience in the IT field. These students have obtained both the "Web Support and Database Administration" and the "Business Application & Database Management" certificates. It has been very difficult to track or reach students after program completion to determine employment success. Based on our recently conducted student survey, over 70% of students in our vocational programs are not working in the IT field. Currently, our most viable measurements are degree & certification completion and industry certification exam passing. Between Sept 2013 to August 2014, there are 9 students passing CompTIA Security+ certification exam and have become computer security certified; there are 6 students passed A+ and Network+ certification exam; there are 12 students passing CISCO CCNA. This IT certification make our students extremely marketable for the IT job market. There are 95 college certificate of achievement awarded during 2013-2014 including 38 on Network Security;25 on Web & Database, 5 on Computer Science and 17 CAOT-Legal Secretary. The division has established an internship program with Aerospace Corporation, two students were hired as Interns in the information Technology Department. Quotes from the director of Information Technology Dept. "The Aerospace Corporation has hired two interns that were members of the West Los Angeles College (WLAC) Computer Science Information Technology (CSIT) program. The Aerospace Corporation has provided independent technical and scientific research, development, and advisory services to national security space programs since 1960. The interns were integrated into the Technical Computing department where the focus is on supporting Unix and Linux systems. They were quickly assigned project tasks, which included system provisioning, security patching and installing configuration management systems. The management system was used to manage and monitor launch vehicles. They played valuable roles in the deployment and support of mission critical systems. The WLAC CSIT program is preparing students with the tools needed to succeed in corporate technology environments. The WLAC interns were able to blend in and contribute in some areas and in others, were able to quickly learn what was needed to be independent. 3) Our Microsoft and Oracle database program director has established an internship relationship with City of Los Angeles, having this internship program benefits the students and makes WLAC more competitive when students are choosing a college to attend. Quoted from the City of Los Angeles, Department of Transportation: "The WLAC CSIT internship program is tremendous assets to the City of Los Angeles, many of the students who have participated in this program have benefited in many ways. For example, some have gone on to find work in the field, others have been prompted into the IT department at their current organization. I would like to emphasize my gratitude for this internship program, due to the fact that the City now has very limited resources in acquiring talented IT employees".
Question:	Is this program subject to approval/accreditation by specialized state, regional, or national accrediting agencies?
Answer:	No
Question:	Indicate recommendation of the most recent accreditation evaluation of the program and corrective actions taken or planned. The most recent accreditation report and all additional pertinent documentation and explanations should be available on site for consultation.
Answer:	Our program is not subject to approval/accreditation by specialized state, regional, or national accrediting agencies. Therefore this is not applicable to our program.
Question:	Describe how you have assessed the appropriate improvements in student achievement and learning that have occurred as a result of the improved program practice.

Answer: We assess improvements in student achievement using the following metrics:

1) Number of Certificates and Degrees awarded: 65 awarded in 2014-2015

35 students have earned college degree/certificate in "Computer Network and Security Management"
11 students have earned college degree/certificate in "Computer Science Information Technology"
10 students have earned college degree/certificate in "Web Support and Database Administration"
7 students have earned "Legal secretary" certificate
2 students have earned "CAOT" associate degree

2) Number of students successfully passing industry certification exams, for the past academic year:

19 students have earned CompTIA A+, Network+ and Security+ certification
6 students have become CISCO certified network associates,
2 students have earned VMware technology certification
23 students have earned Testout PC PRO certification
5 students have earned Testout Network PRO certification
7 students have earned Testout Security PRO certification

Question: Based on survey results, provide a brief analysis of employer satisfaction with program graduates.

Answer: The division has been identifying employers that have students in our programs to expand the employer survey. The following are from two internship programs.

1) Quotes from director of technical computing infrastructure with a large Corporation:

Internships have been a great resource for Aerospace companies in the south bay. The Computer Science Information Technology department has the programs that prepare students for real world job situations. Students that excel in Security, Linux, Virtualization and Cisco courses have been able to get internships and employment due to their preparation at West Los Angeles College (WLAC). Recently, an Aerospace company hired an Intern for the summer, MS. Stephanie Daley. MS Daley performed so well that she received extended hours and is now working part-time while she continues coursework towards her college degree. This type of success can be attributed to the technical courses taught at WLAC. These courses are closely aligned with the technology being used throughout major companies across America.

2) The City of Los Angeles, Department of Transportation is one of the participants in our advisory panel. The division has a long standing internship relationship with this employer. Currently 3 interns are applying for position. The WLAC interns are able to blend-in and contribute in some areas and in others, were able to quickly learn what was needed to be independent. These student will be providing Web application programming and database management supportfor the Business Solutions group. This division is responsible for creating internal and public facing web/database applications. The interns will also helped in programming tasks, application workflow testing, and GIS data-set creation. The prior interns brought a skill set that allowed them to integrate immediately into the group of seasoned IT professionals. This has allowed BSG to deploy a number of applications on time.

Question: Provide a brief analysis of student performance on licensure or board exams on first attempt for each program in the Division.

Answer: Not Applicable to CSIT or CAOT programs.

Module: Completion

Question: Division Chair/ Program Manager: Fill out your name and date of final approval, save, and submit the program review.

Answer: Anna Chiang, Oct, 2015

Question: List the people who participated in this Program Review.

Name	Role