Standard III.C. Technology Resources

III.C.1. *Technology services, professional support, facilities, hardware, and software are appropriate and adequate to support the institution's management and operational functions, academic programs, teaching and learning, and support services.*

III.C.1. Evidence of Meeting the Standard

Appropriate and Adequate Technology Services for Management and Operational Functions. Information Technology Services (ITS) remains the primary provider of technology support and works in close collaboration with other technology support departments such as Broadcast Media Services (BMS), Audiovisual, Educational Access Television (EATV), and Ellucian consultants. With the 2014-15 reorganization of Information Technology Services, technicians who previously reported to departments are now part of Information Technology Services. This realignment has afforded the opportunity to move staff to the areas needing more assistance as well as move some staff into new areas for their professional development. This model of centralized IT services that dedicate resources to serving the many areas around the College is very common.

The College entered into a contract with Ellucian Technology Services two years ago. Ellucian provides additional support for the College's technology services. Ellucian is the maker of Banner, the Enterprise Resource Planning system (ERP) in use at CCSF. Banner is the software CCSF uses to provide and manage services for areas such as Student Development (Admissions and Records, Counseling, Matriculation, Financial Aid, etc.), Academic Affairs (Curriculum), Finance (AR, AP, Purchasing, etc.) as well as HR/Payroll (payroll, hiring, etc.).

They are helping CCSF move to using more baseline Banner (non-customized), enhance technologies such as Argos report writing, and serve as additional technical resources to help complete critical projects.

Ellucian's Application Management Services are providing Oracle database administration, Banner system administration, and operating system administration for CCSF's Ellucian Banner environment. CCSF has since contracted for additional software and services from Ellucian in order to provide greater functionality. The Banner Operational Data Store (ODS) is a data analytics tool that, combined with the Argos reporting software, allows for deeper data analysis and better reporting. CCSF also has contracted with Ellucian to provide implementation and training services for ODS as well as a remote database administrator. Other Banner related services that were not originally put under the original contract with Ellucian are being supported by Ellucian's Application Management Services. These include Banner Enterprise Identity Services (BEIS), ODS, and the job scheduling software Automics/Appworx. Doing this ensures reliable and consistent support for mission-critical software and services.

Central Help Desk services are provided 24x7x365 through CCSF's contract with Ellucian. Help is available via voice (phone) or email as well as a "ticket system" (for tracking requests). The Central Help Desk reports a high level of satisfaction with the services provided, averaging 4.56 out of 5.0 since it was rolled out to the College.[1]

Appropriate and Adequate Technology Services for Academic Programs and Teaching and Learning. The 2014-15 reorganization of ITS noted above created a stronger infrastructure for ITS support of academic programs and teaching and learning by bringing the Educational Technology department into a closer relationship with ITS. The Educational Technology Department provides faculty and student support for distance education and integrates technology into teaching and learning. Reporting to Academic Affairs with a "dotted line" back to ITS, this positions Educational Technology to take better advantage of technology resources while still maintaining a close link to CCSF's instructional needs. ITS, Academic Affairs, and Student Development have created a rich partnership to deliver and support technology.

The College contracts with an outside provider to host the learning management system, Moodle, branded as "Insight" at CCSF. The contract includes a 99.9 percent uptime guarantee, ensuring maximum reliability for students and faculty.[2] [3] Additionally, the contract includes provisions for security, archiving, and restoration. CCSF conducts regular updates to Insight per the host's recommendations.

Educational Technology Department staff support the use of the College's learning management system, Insight (Moodle) for both online classes and technology-enhanced classes.

In June 2016, CCSF will be part of the system's Online Education Initiative. In preparation for moving from Moodle to Canvas, ITS and Educational Technology have been working together for the past six months on testing the integration of Canvas with CCSF's Banner data of classes, instructors, and students as well as a secure method of authentication (logon).

The Chief Technology Officer and the ITS managers (Systems, Network Services, Desktop Support, Academic Computing, Applications, Educational Technology, Office Manager) along with the Director for the Ellucian team meet regularly twice a month to ensure that technology services are appropriate and adequate for all areas of the College by setting directions, discussing active projects, planning future projects, and contributing to creating a technology roadmap to meet the College's goals. The various units within ITS meet on their own schedules as well.

Appropriate and Adequate Professional Support for Management and Operational Functions. The College continues to provide professional support for many aspects of technology to meet the needs of CCSF faculty and staff related to management and operational functions.

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[1] May 2014-Nov 2015 help desk satisfaction stats
[2] TLC Workshop Calendar
[3] CCSF access to Lynda.com

Ellucian maintains a robust schedule of Banner training opportunities for users and CCSF programmers.[4] Additionally, all employees have access to Lynda.com, an online video library of classes on a wide variety of topics.[5]

Appropriate and Adequate Professional Support for Academic Programs and Teaching and Learning. To support academic programs and teaching and learning, the Educational Technology Department publishes and maintains an online schedule of training and other support activities for both classified and faculty.[6] Trainings are offered in-person at the Ocean Campus, and some trainings are offered online. Trainings focus on how such web-based tools enhance the learning process and increase student success. Insight training is also offered online.

Technology Learning Center staff work with faculty to determine the most appropriate training to conduct each semester. Discussions and suggestions concerning the needs for educational technology and training also emerge from the Teaching, Learning, and Technology Roundtable (TLTR), the purpose of which is to make recommendations for the use of technology for instructional support and student services.[7] Ideas for training also emerge from discussions that take place at Distance Learning Advisory Committee (DLAC) and Educational Technology Flex Day meetings and through surveys and workshop feedback.[8]

The Educational Technology Department provides training for faculty converting a class from face-to-face mode to online delivery. Educational Technology funds 24 units of online credit course development per academic year. Between eight and ten new online classes are developed each academic year. Starting in Fall 2015, Perkins funds an additional 15 units of online credit course development. Academic Affairs has renewed the College's commitment to increase online class offerings with a three-year development plan for departments across the curriculum. The end goal of the plan focuses on increasing enrollment while supporting CCSF's mission. It is also through the Educational Technology Department that faculty receive training and support in a variety of educational technologies relevant to face-to-face and distance learning.

Appropriate and Adequate Facilities for Management and Operational Functions. The IT infrastructure extends to most of the College locations, supporting overall management and operational functions. A fiber network connects the Ocean, Mission, Chinatown, Southeast, Downtown, Gough, John Adams, and Evans sites. The new Civic Center location is served through a local Internet Service Provider (Sonic.net) and the SFO airport location gets it connectivity through the SFO IT department. Fort Mason connectivity improved during Spring 2016. Increased bandwidth through internet service provider WiLine has improved connectivity and wireless access is now being provided at Fort Mason.

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[4] Banner Training Sessions
[5] Lynda.com
[6] TLC Workshop Calendar
[7] Teaching and Learning with Technology Roundtable
[8] Distance Learning Advisory Committee

ITS provides network infrastructure for other services as well, including fire alarms, building security, and environmental management systems.

Appropriate and Adequate Facilities for Academic Programs and Teaching and Learning. To support academic programs and teaching and learning through appropriate and adequate facilities, the College has begun to remodel and add classroom technology to approximately 75 different rooms across all College locations. The response to Standard III.C.2. provides more detailed information about this project.

CCSF and Educational Access TV, with the support of public, educational, and government access television channels (PEG) channel funds distributed by San Francisco, have built a state-of-the-art distance learning production classroom in the Multi-Use Building (MUB). The media production field is constantly evolving as the technology grows and offers new and exciting ways to reach audiences. The trend, especially in the Bay Area, is that more people are watching their video content online. Yet even in the Bay Area there are homes that do not have access to the internet and rely on cable television for their connection to the world. With EATV channels 27 and 75 and webcasts on the CCSF website, the College is positioned to reach its students in both ways. Students who need classes that fit into their busy schedules have the ability to participate in a class from their phone, home, or in person. The distance learning classroom in MUB 388 is uniquely suited for this. This classroom was built with robotic cameras, microphones and smartboard and has an attached control room with a switcher, automated audio software, call-in telephone system, and the ability to stream online and on television. Broadcasting department staff, students, and interns have produced two semesters of Math 70, several trainings, and meetings in the distance learning production classroom. Surveys and interviews with students and faculty participants indicated that all participants found having the archived videos available on the CCSF website to be very helpful for review. Students who missed classes were able to watch online. Faculty who could not attend trainings at the Ocean Campus were able to watch and participate via phone in. Students have indicated that they like the flexibility of online classes but prefer the more interactive nature of the live streaming classes. CCSF has only begun to tap the potential of this classroom.

Appropriate and Adequate Hardware. The College has leased or purchased new storage, servers, and firewalls for the data center and maintains and upgrades the virtualization environment as appropriate. In addition, the College purchased a new online backup system in Fall 2015. Employee computer refresh is underway as well. The College purchased and is configuring and installing new servers for the Banner environment. The College expects that this new hardware for Banner will increase system capacity and improve performance (responsiveness).

Appropriate and Adequate Software for Management and Operational Functions, Including Curriculum Management. A number of software solutions optimize overall management and operational functions. For example, the site-wide license for Adobe products

(with its deep discounts for personal purchase), the upgrade of Office 365 to include better services (and free software for personal use), the Lynda.com subscription for employees, new WebCheckout deployments in Broadcast Media Services and Audiovisual, Educational Access TV programming, and the streaming of Board meetings via Granicus provide important services to CCSF students, faculty, and staff.

CCSF is implementing an identity management service that gives employees and students a single username and password for most CCSF services such as network logins, email, CurricUNET, and wireless connectivity. This is in early testing with ITS staff and was rolled out to all employees in Spring 2016. The same service is being deployed for students during Summer and Fall 2016. Known as the RAM ID, this single user name and password will eventually be used for all College services requiring a login.

Enterprise Resource Planning (ERP) projects also continue to increase the operational efficiency of the College. Online requisitions, the implementation of Banner's Faculty Load and Compensation (FLAC) module, expansion of the use of the Banner Document Management (BDM) imaging system to Admissions and Records and Finance, the implementation of Banner Enterprise Identity Services (BEIS) to support identity management, the adoption of OpenCCCApply, Gainful Employment reporting, and many other projects are all having a positive impact on operations. The College is discussing business process changes as a result of these projects, and where appropriate, adopting improvements.[9]

CurricUNET is an integrated assessment, planning, Program Review, and curriculum management software program developed and maintained by Governet, and designed and customized to help CCSF improve upon existing procedures and meet changing accreditation requirements. The software was designed in 2014 in consultation with the College's Curriculum Committee Chair, Articulation Officer, SLO Coordinators, Prerequisites Coordinator, Associate Vice Chancellor of Instruction, and Information Technology Services teams. On the eve of implementation in Spring 2015, the College redesigned the assessment component with Governet to capture assessments at the individual student level to ensure it would meet the new disaggregated SLO data standards. The College deployed the SLO module in Spring 2015 and since then has been successfully capturing SLO assessment data at the student level for one SLO every semester for every section (with a 95 percent completion rate for sections in Spring 2016). The College deployed the curriculum module in Fall 2015 and uses it to manage official curricula descriptions (course outlines and program descriptions) and seamlessly integrate with the SLO assessment module so that SLOs being assessed are those found in the active and relevant course outlines. The Program Review and Planning module integrates with both curriculum and assessment, so that data on assessments and curriculum are readily available for planning and review purposes. Imports and exports were developed to integrate data from all modules into the College's Banner system and Argos reporting system. The Office of Research and Planning worked over Summer 2015 to build an interface and ongoing protocol for linking

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[9] 2015 11 05 Banner update -11/5/15

student-level SLO assessment levels to demographic data, which were then reviewed and reported on in the Fall 2015 Program Review. In Spring 2016, the College further integrated CurricUNET data into its online scheduling system so that for each course scheduled, anyone can click on a link and view the relevant course descriptions, SLOs, and link to the official course outline of record—the ones relevant/active for that particular semester. The College reviews the software and builds upon it each semester to ensure it continues to grow with the College's needs and is as user friendly as possible.

Appropriate and Adequate Software for Student Support Services. The College is also taking advantage of statewide California Community College initiatives to further improve student support services. The College is a pilot school and first implementer for the new Education Planning Tools/Degree Audit System (EPT-DAS) project. Through participation in this project, the College is implementing Starfish education planning and degree audit software and will also implement Starfish Early Alert software. This new project will provide CCSF students with a more robust system for knowing what courses are required for their educational goals (degree audit) and a map for how to achieve those through the proper sequencing of courses (education planning). It will replace CCSF's current education planning software once the project is in production. Early Alert will allow faculty to more easily notify students and counselors of potential problems and issues with student performance as well as provide motivational cues ("kudos") to students who are doing well. This project is funded entirely by the state Chancellor's Office through its Tech Center. The CCSF CTO is currently chairing the steering committee for the pilot schools.

Similarly, the College will be participating in the statewide Student Services Portal project. The College is not part of the very small initial pilot group but will participate after they go into production. The pilot group is slated for early release in the Summer 2016. Part of the broader Education Planning Initiative, this project:

> … will develop a student services portal that will customize and sequence matriculation information and activities to lead students toward successful completion of their goals, and an Education Planning and Degree Audit System to provide transcript, articulation, and curriculum inventory elements to colleges and help college counselors reach more students.[10]

III.C.1. Analysis and Evaluation

The College supports the technology needs of management and operational functions, teaching and learning, academic programs, and support services. Multiple channels provide good communication to help ensure that technology providers know the College's needs and how well they are fulfilling those needs.

Information Technology Services (ITS) remains the primary provider of technology support and works in close collaboration with other technology support departments such as Broadcast Media

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[10] CCCCO Education Planning Initiative Website

Services (BMS), Audiovisual, Educational Access Television (EATV), and the Ellucian consultants. Ellucian is the maker of Banner, the Enterprise Resource Planning system (ERP) in use at CCSF.

The Educational Technology Department provides faculty and student support for distance education and integrates technology into teaching and learning. Ellucian maintains a robust schedule of Banner training opportunities for users and CCSF programmers. Additionally, all employees have access to Lynda.com, an online video library of classes on a wide variety of topics. The Educational Technology Department publishes and maintains an online schedule of training and other support activities for both classified and faculty. In addition, the Educational Technology Department provides training for faculty converting a class from face-to-face mode to online delivery.

The ITS infrastructure extends to most of the College's locations in support of management and operational functions through a fiber network and local internet providers. ITS provides network infrastructure for other services as well, including fire alarms, building security, and environmental management systems. The College has remodeled and added classroom technology to approximately 75 different rooms across all of College locations (see Standard III.C.2.).

The College has leased or purchased new storage, servers, and firewalls for the data center and maintains and upgrades the virtualization environment as appropriate. The college has a number of software solutions that optimizes the management and operational functions. In addition, the College is a pilot school and first implementer for the new Education Planning Tools/Degree Audit System (EPT-DAS) project.

Conclusion. The College meets Standard III.C.1.

III.C.2. *The institution continuously plans for, updates and replaces technology to ensure its technological infrastructure, quality and capacity are adequate to support its mission, operations, programs, and services.*

III.C.2. Evidence of Meeting the Standard

The College continuously plans for, updates, and replaces technology to ensure that it can carry out its mission, operations, programs, and services.

Continuous Technology Planning. Technology planning continues to be integrated with institutional planning. Program Review is the primary mechanism for informing technology planning. Technology-related requests go through several prioritization steps. The Information Technology Advisory Committee started in May 2016 to create a matrix for evaluation of these

requests.[11] These prioritizations help inform the work of the workstation refresh program and the installation of classroom technology at all of the College's locations.

The primary group responsible for maintaining and updating the College Technology Plan is the Information Technology Advisory Committee (ITAC). In Fall 2016, ITAC will become an official committee reporting to the Participatory Governance Committee. ITAC's goal is to:

> ... advise the ITS Department, CCSF Administration, and the Board of Trustees on decisions regarding information technology and draw input from all College constituencies on IT decisions that affect them in order to ensure the best possible decisions are made.

Monthly ITAC meetings keep the members (and their constituencies) informed about technology projects, issues and trends affecting the District.[12] Membership includes students, classified staff, faculty, and administrators. Typical topics include identity management, status of the ongoing equipment refresh, any changes in staffing, status of wireless network connectivity, technology policy and procedural items, security, and updates on Banner, Educational Technology, and other important initiatives. The meetings also provide a forum for members and guests to provide input. The Chief Technology Officer and relevant staff from ITS and other College technology providers participate on this as members or staff resources. The ITAC website is used as a primary location for sharing information about technology out to the College community.[13]

Technology planning at CCSF is well informed by various participatory groups in addition to ITAC, including the Banner Renewal Advisory Group, the Distance Learning Advisory Committee, and the Teaching and Learning with Technology Roundtable. All of these provide valuable input to Information Technology Services, Audiovisual, the Library, and other providers of technology-related services.

- The **Banner Renewal Advisory Group (BRAG)** is a committee of "data managers" who each have responsibility for particular areas heavily involved with both CCSF's Banner implementation as well as our MIS reporting. It meets every other month to keep the members up to date with various Banner projects as well as to make sure that CCSF is completing its MIS reports in an accurate and timely manner.[14]

- The **Distance Learning Advisory Committee (DLAC)** collaborates with Academic Affairs, ITS, and Student Services on "best ways to serve distance learning students." DLAC establishes the criteria and procedures involved in the selection of courses for distance learning and recommends distance learning courses for development. DLAC reviews applications from online course developers and recommends reassignment units needed for that development. Additionally, the Committee recommends guidelines

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[11] May 2016 ITAC meeting minutes
[12] ITAC meetings
[13] ITAC Website
[14] Banner Renewal Advisory Group Website

related to distance learning instruction and issues and seeks and disseminates information regarding distance teaching and learning. DLAC interprets changes in state and federal regulations that impact distance education and recommends policies and procedures resulting from these changes.

- The purpose of the **Teaching and Learning with Technology Roundtable (TLTR)** is to:

> ... foster communication among faculty about appropriate uses of technology in the learning and teaching processes. The Committee also recommends policies and procedures for the use of technology in instructional support and student services with the goals of promoting successful learning and student achievement.[15]

Both the TLTR and DLAC provide a forum for the discussion and dissemination of new educational technologies relevant to faculty teaching distance learning and face-to-face classes. Faculty at both committees continue to discuss technologies that improve teaching and learning. Outside vendors provide access to web-based software and provide new educational hardware to the TLTR, DLAC, and Educational Technology Department.

ITS staff also participate in specialized technology planning. For example, the ITS Managers for Desktop Support and Academic Computing participate in the review of Perkins grant requests that require technology. Classroom technology, computer labs, and new software are typical examples. Their participation assures that CCSF moves ahead with projects that fit the technology infrastructure and that these projects can receive sufficient support.

Each of these groups and projects help CCSF align its technology strategies and operations with the College's Mission and Vision Statements, the Educational Master Plan, and other College-wide plans.

To collect additional information about needs and to verify that the College is fulfilling technology needs, the College administers a variety of technology surveys.[16] The Spring 2015 survey, adapted from the Educause Center for Analysis and Research (ECAR), included questions specific to online learning for faculty and students.[17] [18] [19] The purpose is to gain insight into student and faculty perceptions of IT to promote conversations about how IT is meeting the needs of these groups. For example, 55 percent of student respondents and 40 percent of faculty respondents felt that the use of student data to create individualized messages about academic progress, training, and guidance opportunities was a "Good" or "Very good" idea. Further, over 70 percent of student respondents indicated at least a moderate level of interest in all early-alert services. This bodes well for current efforts to implement Starfish Early Alert. In other areas, such as wireless connectivity, responses related to reliable access to

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[15] TLTR
[16] Reports on employee satisfaction
[17] ECAR study of faculty and technology
[18] ECAR study of students and technology
[19] ECAR technology survey

wireless specifically in classroom/instructional spaces showed that improvement is needed and additional access points have been installed (17 percent rated this item as "Poor" and 16.2 percent rated it as "Fair"; see below for information on wireless access point installations).

Continuous Technology Upgrades and Replacements. As noted in Standard III.C.1., with improved funding, ITS has been able to take a hybrid approach to upgrades, and has leased new storage and servers for the data center and a new backup system (hardware and software). In addition, the College purchased new firewalls to provide improved security as well as increased bandwidth.

The College is also upgrading desktop computers. Employees can check to see whether they are on the current computer refresh list by linking to a publicly accessible spreadsheet from the ITAC website.[20] Employees who are not on the list but believe they should be utilize a new Help Desk process to request an upgrade. CCSF has deployed 200 new workstations through the employee computer refresh program, replacement of non-functioning equipment, and new hires since October 2014.[21]

The College is also upgrading or building new computer labs. On the Ocean campus, Multi-Use Building (MUB) room 255 is a new computer lab with 41 workstations shared by the Math and Child Development Departments. With the leasing of a new space, the College built a new computer lab of 32 workstations at Civic Center and another 368 workstations were replaced at additional various computer labs throughout the College.[22]

Wireless connectivity has also seen a major upgrade and expansion effort in the past year as CCSF tries to make connectivity ubiquitous. Since November 2014, the District has deployed 140 new access points for a total of 378. With the institution's unique partnership with Cisco Meraki, CCSF has been able to deploy wireless access points with 802.11ac Wave 2, which includes Multi-User multiple-input and multiple output (MIMO), and management software in exchange for providing feedback on their performance.[23]

New servers for Banner have also been purchased, and, with the assistance of Ellucian's Application Management Services, ITS staff are working to deploy them. This project will include moving from the HP-UX operating system to Linux as well as more capable hardware. An improved architecture for how production and test environments are installed across the servers will also improve performance.

Banner is being kept up to date as well. Financial Aid, critically dependent on updates for regulatory compliance, is current at version 8.24 (as of October 2015). HR/Payroll was updated to version 8.12.2 in December 2015. A significant Student upgrade to 8.9.1 took place in March 2016. Other modules are regularly updated as necessary and patches are also applied

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[20] Upgrading desktop computers
[21] Systems deployed 2013-2015 Dell Desktop and Laptop
[22] Dell - Academic Computer Inventory 6/20/16
[23] Wireless Access Points Installed

consistently. CCSF is at the current Oracle level as recommended by Ellucian Product Management – 11.2.0.4.[24]

The College embarked on a project to remodel and add classroom technology to approximately 75 different rooms across all College locations. A list of targeted classrooms is available at the ITAC website to keep the College community informed.[25] The list includes 50 rooms on the Ocean campus, eight rooms at the Mission Campus, and 23 more rooms throughout all locations. As of June 2016, 67 rooms have been completed or are in progress with a completion date before the start of the Fall 2016 term. The College allocated $3.4 million last year for this project, and the goal is to remodel as many of the listed rooms as possible. The state will likely provide an additional increased allocation in scheduled maintenance and instructional equipment money that was the source of funding for this project.[26]

III.C.2. Analysis and Evaluation

Planning is engrained in the many processes and the input from advisory committees. Updates and replacement of technology across a broad spectrum of user workstations to data center servers and storage, to network connectivity to mission-critical software, such as Banner, take place in a regular and orderly fashion.

Technology planning at CCSF is integrated in the overall planning process. The CCSF Technology Plan is tied to the Educational Master Plan. College-wide and functional area goals in the Technology Plan serve to fulfill goals in the Educational Master Plan. Technology planning continues to be well informed by various participatory groups in addition to ITAC, including the Banner Renewal Advisory Group, the Distance Learning Advisory Committee, and the Teaching and Learning with Technology Roundtable. With increased funding, Information Technology Services has been able to take a hybrid approach to upgrades and has leased new storage and servers for the data center and a new backup system (hardware and software), see III.C.1.

Conclusion. The College meets Standard III.C.2.

III.C.3. *The institution assures that technology resources at all locations where it offers courses, programs, and services are implemented and maintained to assure reliable access, safety, and security.*

III.C.3. Evidence of Meeting the Standard

Assuring Reliable Access to Technology Resources: Staffing and Management. Information Technology Services uses a hybrid model to provide services and support throughout the

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[24] Banner Prod Upgrades as of November 5, 2015
[25] List of Targeted Classrooms
[26] Classroom Tech Project Status - 6/20/16

College's locations, including a mix of dedicated staff and project teams comprising staff from various locations. For example, the Chinatown/North Beach Center has one dedicated support staff member with a second staff member who serves that location and roams to others. Dedicated support staff members also serve the Downtown Center, Gough Street (the District Business Office), John Adams Center, and the Mission Center. A floating staff member serves Evans and Southeast, each of which typically have fewer needs. One of the department's most experienced support staff currently provides services at the new Civic Center location in addition to roaming to other locations as needed. The ITS Manager for Desktop Support also helps to provide day-to-day support at any location that needs additional help.

Hiring to reach a sufficient staffing level in Information Technology Services continues; recent hires include: a principal network engineer, senior programmer, desktop support positions, a principal HR/Payroll programmer, and a principal finance business analyst. The College is currently recruiting other programmers, desktop support technicians, media/AV support, and trainer positions. These positions are important for ITS to optimize technology support and accessibility at all sites.

Assuring Reliable Access to Technology Resources: Internet and Communications Technology. Data, voice, and wireless connectivity are provided at all sites. Chinatown, Mission, Gough Street, Downtown, Evans, Southeast, John Adams are all on CCSF's fiber network. The College's Airport Center utilizes the network services of the San Francisco Airport. The new Civic Center site is served by a local ISP but is on the list for fiber connectivity from CENIC, the Internet Service Provider for the California Community Colleges. Also on that list are the Airport Center, Fort Mason Center, and Chinatown/North Beach Center (for a redundant connection).

Reliable Access to Technology Resources: Computer Lab and Employee Workstations. The College maintains many student computer labs workstations across all College locations:

- Airport Center: 32 computer lab workstations
- Chinatown/North Beach Center: 379 computer lab workstations
- Downtown Center: 271 computer lab workstations
- Evans Center: 43 computer lab workstations
- Fort Mason Center: 20 computer lab workstations
- John Adams Center: 274 computer lab workstations
- Mission Center: 632 computer lab workstations
- Ocean Campus: 1,856 computer lab workstations
- Southeast Center: 90 computer lab workstations

The employee computer refresh program is College wide and not restricted to a single location. That program is tackling the oldest and least capable computers first no matter where they are

located. As required, the College makes available and upgrades specialized hardware and software for specific disciplines such as Nursing at John Adams.

Reliable Access to Technology Resources: Software. Mission-critical software is available everywhere. In addition, the College utilizes many externally provided cloud-based resources (Lynda.com, CurricUNET), which are not location dependent. Development of network-based management tools is also allowing for equal access to technology resources across the College. Microsoft's System Center is an example of such a tool. Employees can now download and install many software packages themselves through this system without requiring the assistance of technology support staff. Casper for the Macintosh platform is being implemented and offers the same capabilities of self-service software installations. The help desk is available 24x7x365 from any location as well.

Assuring Reliable Access to Technology Resources: Training. Larger locations utilize a combination of resources to provide training for employees. For example, a faculty member at Chinatown with an interest and background in educational technology takes a lead role in helping to provide training at that location. Lynda.com is available throughout all locations and many training sessions from external sources use the webinar approach so people can participate from any location.

Assuring Safety and Security of Technology Resources. The College ensures the safety and security of its technology resources in a variety of ways. CCSF upgraded its firewall capabilities with two new firewalls from Palo Alto Networks, replacing an older Palo Alto Networks firewall and a Checkpoint firewall.[27] These have increased bandwidth capacity (10G) to handle the College's impending increase in Internet connectivity to 10G as well as better processing of the data that flows through the firewalls. The College subscribes to Palo Alto Networks' URL Filtering and Threat Prevention services designed to keep the firewalls up to date. Staff in Technical Operations within ITS regularly monitor firewall logs.

The College has outsourced the systems administration of its Banner environment to Ellucian, and among the services Ellucian provides is a quarterly security analysis of those servers and any recommendations. ITS follows those recommendations and Ellucian system administrators conduct that work. Other servers are administered primarily by personnel in the Systems group within ITS and are regularly updated and patched for system vulnerabilities.

ITS follows best practices in higher education security. ITS disables accounts when ITS is notified of an employee's departure. Rights are assigned via the College's Active Directory infrastructure or in the Banner environment, through Banner security itself. Virus protection is standard on every computer distributed by ITS. The network infrastructure is divided between an administrative network and an academic network, enforcing a separation so that mission-critical resources, especially those with confidential information, are better protected.

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[27] Palo Alto Networks renewal PO - 11/14/15

In April 2016, ITS learned that a management employee in Financial Aid had previously responded to a phishing email. While the employee had their password changed within a couple of days by the Help Desk, ITS discovered evidence that the account had been breached. A now-discontinued legacy practice in Financial Aid had been the emailing of report output from the many daily processing jobs that are part of Financial Aid. Some of these reports contained student personal identifying information (PII). The College contacted its insurance JPA immediately. Working with the law firm that the JPA uses, the College identified 7,536 students and proceeded to notify them and law enforcement as required by law. Each affected individual was contacted via U.S. mail and offered a free one-year subscription to Experian's credit monitoring service.

URL filtering software was already enabled on the firewall and spam/junk controls in place for Office 365 but not all phishing attacks can be stopped that way. The CTO notified all employees and students that this event had taken place in addition to the legally required notification to affected individuals. Additional steps to enhance security have been implemented. These include:

- Self-service email forwarding has been turned off. Requests to forward email have to be sent to the Help Desk.

- Two-factor authentication for email access is required for employees with access to PII. Financial Aid managers have been set up.

- Two-factor authentication for email access is offered and encouraged for all employees. Training is being scheduled for Fall 2016.

- Reports with PII are being now distributed through more secure means. Email is no longer used.

- All laptops are imaged with whole disk encryption.

- Data loss prevention features of Office 365 are being tested.

- Training already available from CCSF's subscription to Lynda.com was highlighted in an email to the employees from the CTO. Additional training is available through the CCC Tech Center and a curriculum is being developed.

- The CCC Tech Center security staff did a security evaluation of ITS (penetration testing for system, etc.) as well as a business process review of functional areas such as Admissions and Records, Financial Aid, Finance, Payroll, and Human Resources.

The College purchased a new backup system in July, 2015.[28] The Dell NetVault uses advanced technology known as deduplication which allows it to only store a single copy of multiply-occurring data. The appliance is located in the College's main data center on the Ocean Campus. The College also purchased a similar (though smaller capacity) NetVault; after ITS is done with

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[28] Dell NetVault Lease PO - 9/12/15

the implementation, it will move the server to a site at 200 Paul Avenue in San Francisco. The smaller unit will hold copies of all the College's mission-critical data that the larger NetVault backs up. This will give CCSF redundancy in case there is anything that happens to either unit.

The Telx® facility at 200 Paul Avenue houses data center co-location and telecommunications carrier facilities. The facility is seismically rated for protection against earthquakes. CCSF rents a half-size cage at this facility and its CENIC-provided Internet connection comes to the Ocean Campus from there.

CCSF participates in the InCommon consortium through an agreement offered by the State Chancellor's Office. This allows the College to have access to server security certificates as well as the potential to expand its identity management efforts to other InCommon members, such as San Francisco State University. The two institutions could securely allow each other's students to access specific local resources should the need arise given their participation in joint ventures together.

In order to stay current with higher education security trends and issues, the Manager for Technical Operations and several staff virtually attended the 2016 Educause Security Professionals Conference April 18-20.

The College is also starting to deploy full-disk encryption for all laptops issued to employees. This will prevent anyone from accessing the information on these laptops if they are lost or stolen. In April 2016, this became a standard step in the imaging of PC laptops. With the recent purchase of the Casper software suite for managing Apple (IOS and OSX) devices, full disk encryption has been added to the imaging process for those laptops as well.

III.C.3. Analysis and Evaluation

Through a mix of staffing and/or cloud-based services, the College provides and supports internet connectivity, communications technology, hardware, software, and training across all locations. Information Technology Services and other departments work hard to ensure that technology resources are as safe and secure as possible while recognizing that security is a fast moving target in today's digital environment.

Information Technology Services uses a hybrid model to provide services and support throughout the College's locations, including a mix of dedicated staff and project teams comprising staff from various locations. The College continues to the hiring process in an effort to reach a sufficient level of staffing in ITS, therefore continuing its commitment to assuring reliable access to technological resources throughout the District.

Data, voice, and wireless connectivity are provided at all sites. The College maintains many student computer labs workstations across all College locations. The employee computer refresh program is College wide and not restricted to a single location. That program is tackling the oldest and least capable computers first no matter where they are located.

Mission-critical software is available everywhere. In addition, the College utilizes many externally provided cloud-based resources (Lynda.com, CurricUNET), which are not location dependent. Many locations throughout the District utilize a combination of resources to provide training for staff. Lynda.com is available throughout all locations and many training sessions from external sources use the webinar approach for participation from any location.

The College continues to be diligent in its efforts to take every precaution to ensure the safety and security of its technological resources through a variety of ways.

Conclusion. The College meets Standard III.C.3.

III.C.4. *The institution provides appropriate instruction and support for faculty, staff, students, and administrators, in the effective use of technology and technology systems related to its programs, services, and institutional operations.*

III.C.4. Evidence of Meeting the Standard

The College provides appropriate instruction and support for faculty, staff, students, and administrators in the effective use of technology and technology systems for all functions of the College.

Appropriate Instruction and Support for Faculty in the Effective Use of Technology. The Technology Learning Center Coordinator and the Distance Learning and Teaching Specialist work closely to provide one-on-one consultations, online workshops, and face-to-face training on a variety of educational technologies.

The Educational Technology Department, including Technology-Mediated Instruction and the Technology Learning Center, provides faculty training in teaching online and technology-enhanced classes. Services include consulting, training, and support in educational technologies. Educational Technology also provides an open computer lab for faculty and staff on the Ocean Campus and a Satellite Laboratory for faculty and staff.

One of the Educational Technology Department's primary areas of focus remains on increasing the use of the College's official Learning Management System by faculty teaching credit classes to "tech-enhance" (TE) a face-to-face class. The online TE training option is self-paced and faculty can begin at any time. In 2015-16, 288 tech enhanced instructors enrolled in "Resources and Info for TE Faculty," an online resource center created and supported by the Educational Technology Department. Faculty must have completed Insight training in order to be enrolled in this online class/resource center. It was originally created for faculty using Insight to tech-enhance a face-to-face class and contains information on topics such as accessibility, Family Educational Rights and Privacy Act (FERPA), and ideas for using Insight tools.[29] Throughout

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[29] Educational Technology Department Website Containing Information About Using Insight to Tech-enhance a Face-to-Face Class

the semester, the Technology Learning Center offers trainings on Insight that focus on specific tools to enhance learning.

All faculty must be certified by the ETD before teaching online, and, as such, participate in the "Online Teaching and Learning Course" and work one-on-one with the Distance Learning and Teaching Specialist. The focus of this course is on the pedagogy of online learning including how to maintain regular and effective contact in a distance learning mode, and a number of other topics, including accessibility, distance integrity, retention and success rates, tools to improve student learning, and library and learning resources.[30] The Alternative Media Specialist reviews newly developed online classes for accessibility. Faculty already teaching an online class are part of the ETD. As members, they can participate in additional focused trainings on the pedagogy of teaching online, participate in department meetings, and access the Resource Center for Distance Learning Faculty.

Through monthly meetings of the Distance Learning Advisory Committee (DLAC), representatives from Academic Affairs, Student Services, and ITS collaborate on best ways to serve distance learning students. DLAC establishes the criteria and procedures involved in the selection of courses for distance learning and recommends distance-learning courses for development; it also reviews applications from online course developers and recommends reassignment units for that development. Additionally, DLAC recommends policies related to distance learning instruction and issues and seeks and disseminates information regarding distance teaching and learning. DLAC interprets changes in state and federal regulations that impact distance education and recommends policies and procedures resulting from these changes.[31] Through all of these activities and areas of interest, DLAC works to promote the effective use of technology as it relates to distance learning.

The Educational Technology Department continues to works closely with Human Resources in order to provide Flex Credit for trainings on topics such as "Insight tools to increase student success." The Educational Technology Department also continues to partner with the Student Learning Outcomes Coordinator to offer workshops on educational technology tools to capture student learning outcomes data, also eligible for Flex Credit for faculty.

For faculty using certain classroom technology, Broadcast Media Services (BMS) provides training on demand as well as by appointment. Staff are available to assist faculty in the use of audio and visual recording and playback technology equipment. Some overlap in services exists between BMS and Audiovisual in order to fully support faculty throughout the College in their use of classroom technology.

In Spring 2016, the Audiovisual department joined with the Information Technology Services department. Excellent cooperation between Broadcast Media Services, Audiovisual, Educational Technology and ITS has resulted in establishing District-wide

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[30] Training Process for Developing an Online Class
[31] Distance Learning Advisory Committee

standards for classroom technology, the planning and rollout of CCSF's Classroom Technology and Renovation project, and training sessions and videos on how to use the classroom technology equipment.[32]

Appropriate Instruction and Support for all Employees in the Effective Use of Technology. In addition to the faculty-specific training above, the Educational Technology Department also provides one-on-one training for all employees on applications such as Google Apps for Higher Education. The Technology Learning Center Coordinator recruits faculty to offer workshops on a variety of learning technologies such as VoiceThread, Google Hangouts, and Turnitin in the TLC. The TLC also provides highly trained lab aides and themed drop-in labs such as Excel for both faculty and staff. Faculty and staff can work one-on-one with staff in the Technology Learning Center on topics such as how to update the College's website, Google Forms, and Excel.[33]

The College also provides training to support CCSF's Banner initiatives. Training has included general interest areas such as budget development, Argos report writing, budget development in Banner self-service, budget checking and online requisitions, Banner Document Management (imaging), FLAC (Faculty Load and Compensation) and other Banner functions and features. Training has also included more specialized tools such as the Argos reporting dashboard for DSPS.[34]

All employees have access to training for the CurricUNET system (curriculum development, assessment, Program Review) as well.[35] CurricUNET training includes online user manuals, task guides, video tutorials, a drop-in help lab, customized trainings, and workshops to support all employees in the use of CurricUNET for student outcomes assessment, curriculum development, and Program Review/Planning.[36]

The College continues to subscribe to Lynda.com which gives all employees access to a comprehensive video training library. The Library offers training as well on the use of the electronic catalog, e-books, and research skills. These are offered online, and faculty can request a customized, librarian-led workshop tailored to a specific class.

Technical training for technology support staff also continues. Information technology Services staff members have participated in specialized training for a new Storage Area Network (SAN) implementation and for administering Banner Document Management (BDM). Training is scheduled for November 2016for a new backup system. In March 2015, 11 people attended the CISOA/3CBG conference in Monterey. This conference brings together technology leadership with functional ERP staff who use Banner or Colleague, both Ellucian products. The CCSF team

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[32] Training sessions and videos on how to use the classroom technology equipment
[33] Technology Learning Center Website
[34] Ellucian CCSF Training 2014 2015
[35] CurricUNET Help Lab Website
[36] Curricunet Training Archive

represented many areas including Payroll, Financial Aid, Research and Planning, Budget, and Counseling. The Chief Technology Officer, Manager for Applications, and Financial Aid administration and staff also attended the Ellucian Live conference in April 2015. This is an event dedicated to users of Ellucian products such as Banner. Informal technology training occurs as well. The desktop support and academic computing staff regularly have a joint meeting that always includes some training aspect.

Appropriate Instruction for Students in the Effective Use of Technology. Since Fall 2006, the College has had an Information Competency graduation requirement. Degree completion (e.g., AA/AS or transfer degree) requires that students must satisfy the Information Competency requirement by successfully completing the Area B Written Composition requirement, specifically English 1A. The ENG 1A Course Outline of Record includes the teaching and assessment of at least six of the seven information competency skill areas and a minimum of five hours of library research skills workshops is mandatory.

Departments that offer classes in technology-oriented subjects include: Visual Media Design, Cinema, Computer Science, Computer Networking Information Technology, Business, Photography, Architecture, Biotechnology, and Broadcast Electronic Media Arts.

Appropriate Support for Students in the Effective Use of Technology. Several support centers exist as well. The Academic Computing Resource Center (ACRC) supports students in Computer Science, Computer Networking Information Technology, and Visual Media Design. The ACRC offers highly specialized software and environments that are taught in the classes from the departments above.

The Learning Assistance Center (LAC) is another support center for students in their use of technology. The LAC Computer Lab and the ACRC are the College's largest open-access computer labs for students. Computers are available for CCSF students and the computer workstations offer a variety of course-related educational software, CD-ROMs, Microsoft Office and Internet/email access.

The English Lab provides students with individualized support in creating documents for their English courses, evaluating sources, and using various learning software programs. The English Lab also uses Reading Plus, a reading software for developmental reading students. This software is designed to help developmental reading students improve reading comprehension, vocabulary, and reading speed.

The Library also offers training and a wide assortment of documentation to help users. They produce guides on a variety of topics such as helping students connect to the College WiFi, how to use Library computers and photocopying/faxing/printing, research guides that teach specific technologies, instructions for faculty on linking to articles, getting the faculty started on e-reserves (electronic documents students can access through CityCat, the library catalog, so they are accessible 24/7 from anywhere with an Internet connection, and not restricted to

library hours or seating availability), and more.[37] [38] [39] [40] Where possible, guides are multilingual.[41]

Appropriate Support for Online Students in the Effective Use of Technology. The College continues to offer students a one-unit course, "Successful Online Learning" (LERN 55) several times each semester. The class focuses on technology skills, communication skills, and online study strategies for students new to online learning.[42] Additionally, students taking an online course can use the online ticketing system, search the online question and answer knowledge bank, call the Educational Technology Department, or drop in for more specific training. ETD is developing an online orientation for Insight users modeled after the current New Student Orientation.

The Educational Technology Department provides support for students enrolled in all online classes as well as students enrolled in technology-enhanced classes using Insight (Moodle). The College continues to contract with Advanced E-Learning Services (aelearn), an outside vendor, to provide Tier One and Tier Two support to students using Insight. Support is provided through online tickets 365/7 from 9:00 a.m. to midnight (PST).[43] Additionally, aelearn provides a searchable FAQ and a computer system check.[44] Tickets escalate to the Educational Technology department staff. The Educational Technology Department archives all tickets for assessment purposes and periodically reviews them to identify areas for future trainings as well as for improvements in information dissemination to faculty and staff via email and web pages. Additionally, students using Insight can access phone support and can access drop-in support at the Ocean Campus during the week.

Ensuring that Technology Training Meets the Needs of Participants. CCSF regularly participates in the California Community College Chancellor's Office Distance Education Survey. In addition, the College distributes an Online Faculty Satisfaction Survey and an Online Student Satisfaction Survey. Distributed in Spring 2016, the Online Student Satisfaction Survey shows a high degree of overall satisfaction with CCSF's online program.[45] [46] Results of these surveys are used to make necessary improvements to instructional and technology support and to enhance the learning environment. The TLC regularly provides participants with exit surveys after participating in face-to-face and online workshops. Results of such surveys drive changes and improvement of services.

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[37] Library services on computers and wireless

[38] Library research guides

[39] Linking to articles

[40] Electronic reserves

[41] Guides are multilingual: Email, Wi-fi

[42] Successful online learning

[43] Online ticketing system

[44] Online course support center

[45] Online Student Satisfaction Survey Spring 2016

[46] Online Student Satisfaction Survey Data

III.C.4. Analysis and Evaluation

Faculty, staff and students receive support through training and instruction in a wide range of skills and content areas as part of CCSF's efforts to promote the effective use of technology across the institution. Information literacy is required for students completing a degree (as part of ENGL 1A) and technology help for students is available throughout the institution in locations such as the Library and Learning Resources Center, the Academic Computing Resource Center, programs such as TechSpot in the Computer Networking and Information Technology department, and through Information Technology Services staff throughout the district and the Central Help Desk, Technology training and support for employees is widely available in many formats—on-demand, in person, video—and covers many different types of topics.

The Technology Learning Center Coordinator and the Distance Learning and Teaching Specialist work closely to provide one-on-one consultations, online workshops, and face-to-face training on a variety of educational technologies. All faculty must be certified by the ETD before teaching online, and, as such, participate in the "Online Teaching and Learning Course" and work one-on-one with the Distance Learning and Teaching Specialist.

The Educational Technology Department provides one-on-one training for all employees on applications such as Google Apps for Higher Education. Additionally, the Technology Learning Center Coordinator recruit faculty to offer workshops on a variety of learning technologies such as VoiceThread, Google Hangouts, and Turnitin in the TLC. Information Technology Services staff members have participated in specialized training for a new Storage Area Network (SAN) implementation and for administering Banner Document management (BDM).

The Library provides technology help for students with services such as Gmail and connecting to the college wireless network (wifi).

Since Fall 2006, the College has had an Information Competency graduation requirement. Degree completion (e.g., AA/AS or transfer degree) requires that students must satisfy the Information Competency requirement by successfully completing the Area B Written Composition requirement, specifically English 1A.

Conclusion. The College meets Standard III.C.4.

III.C.5. *The institution has policies and procedures that guide the appropriate use of technology in the teaching and learning processes.*

III.C.5. Evidence of Meeting the Standard

The College is in the process of adopting formal policies to guide the appropriate use of technology in the teaching and learning process.

In Spring 2016, the Information Technology Advisory Committee developed a draft Computer and Classroom Technology Use policy and accompanying administrative procedures. This policy (and procedures) will follow the standard process of the College (as documented in the Roles, Responsibilities, and Processes flowcharts) for review and approval in Fall 2016.

With respect to distance learning, faculty must receive training in order to teach online. In addition, the Higher Education Opportunity Act of 2008 requires that higher education institutions offering distance education must use an authentication system to verify that the student enrolled in the class is the same student completing the coursework. During July 2016, the Board of Trustees will adopt a Board Policy related to student authentication, and the Chancellor will adopt the accompanying administrative procedures.[47]

III.C.5. Analysis and Evaluation

The College's Information Technology Advisory Committee developed computer and classroom technology use policies and procedures. The College is awaiting formal approval by the Board of Trustees in Fall 2016. In addition, the Board of Trustees will adopt a policy related to student authentication, and the Chancellor will adopt the accompanying administrative procedures in July 2016.

Conclusion. The College meets Standard III.C.5.

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[47] Draft BP 6.28 (Student Authentication); Draft AP 6.28 (Student Authentication)

Standard III.C. Changes and Plans Arising out of the Self Evaluation Process

Standard III.C. Changes Arising Out of the Self Evaluation Process				
Goal	**Associated Action(s)**	**Person(s) Responsible**	**Completion Date**	**Expected Outcome**
Adopt a Student Authentication Policy to ensure verification of students' identities in distance learning classes (Standard III.C.5. and Commission Policy on Distance Education)	Draft a Student Authentication policy and procedures Obtain approval of Student Authentication policy and procedures Implement Student Authentication policy and procedures	Chief Technology Officer General Counsel	1st read of BP 6.28 (Student Authentication) took place on June 23, 2016; Board adopted this policy on July 28, 2016; posting on website expected in early August 2016 with immediate implementation	Adopted Board policy and implementation to ensure confirmation of distance learning students' identity

Standard III.C. Plans Arising Out of the Self Evaluation Process				
Goal	**Associated Action(s)**	**Person(s) Responsible**	**Expected Completion Date**	**Expected Outcome**
Develop clear directions for the appropriate use of computers and the appropriate use of classroom technology (Standard III.C.5.)	Draft Computer and Classroom Technology Use Policy and procedures Obtain approval of Computer and Classroom Technology Use Policy and procedures Implement Computer and Classroom Technology Use Policy and procedures	Chief Technology Officer General Counsel	ITAC completed draft in May 2016 Approval and implementation expected in Fall 2016	Faculty and staff will have clear directions for the appropriate use of computers and the appropriate use of classroom technology