



Clovis Community College
Technology Plan 2017-2020



Technology Plan

2017-2020

Introduction

Clovis Community College (CCC) strives to maintain a high level of commitment to provide support of technology needs across instructional, administrative, and student services areas.

The purpose of this Technology Plan is to establish technology guidelines that will help direct Clovis Community College as we prepare for the future. This plan contains visions and recommendations for technological enrichment within Clovis Community College that will occur over the next three years.

This plan examines the current status of technology at Clovis Community College, focusing on three major elements that are crucial for the success of any technology master plan: organization, processes, and technology. It contains administrative procedural recommendations that should be implemented and supported as CCC intends to continue to maintain the high standard of education it currently provides.

After completion of the [Educational Master Plan](#) (Fall 2016), [Strategic Plan](#) (Spring 2017), and [Governance Handbook](#) (Summer 2017), the Technology Committee updated the CCC Technology Plan. The plan was presented to College Council and was shared with various governance groups for comment prior to final review by College Council (Fall 2017).

Support of College Mission and Vision

The mission of Clovis Community College is *Creating Opportunities – One Student at a Time*:

- We embrace diversity and serve all students of the community;
- We believe education is based on integrity, generosity, and accountability;
- We foster critical, creative, and engaged thinking;
- We support student success by preparing students for their futures and for the community's future through career/technical certificates, degrees, and transfer programs;
- We cultivate community partnerships to enhance student learning and success;

- We engage in reflective, data-driven cycles of research and innovation focused on learning and student outcomes.

VISION STATEMENT

Clovis Community College is the college of choice for academic excellence, innovation, and student achievement.

Education Master Plan Alignment: Innovation

Our college prides itself on being in the vanguard of innovation. We are committed to the highest levels of rigor and inspiration, and so we explore innovative practices that will provide the best opportunities for our students.

Following are the overarching goals of the 2017-2027 Educational Master Plan, which encompass six major areas:

- ACCESS: Expand opportunities and remove access barriers
- TEACHING & LEARNING: Promote excellence and opportunities
- SUPPORTING STUDENT SUCCESS: Provide comprehensive services while promoting equity
- COMMUNITY & PARTNERSHIPS: Strengthen and develop external relationships
- RESOURCES AND FACILITIES: Expand and enhance the capacity of the college
- INSTITUTIONAL EFFECTIVENESS: Strive for excellence in planning, governance, and communication

Technology Goals

In support of the college's mission, Education Master Plan and Strategic Plan, the Technology Plan has the following four goals:

- All staff computers will meet the requirements for mid or high-level computers.
- All campus technology resources available to students will meet the minimum hardware requirements and software resources will be kept up to date.
- All current technology resources will be assessed for compliance with accessibility.
- All action plans will be reviewed to ensure that all new technology purchases meet recommended standards and accessibility requirements.

Current Status of Technology

Staff

The Clovis Community College Technology Services Department is under the direction of the Dean of Instruction, STEM and Technology Services. The Dean reports to the Clovis Community College president for technology related planning and implementation. Clovis Community College has one Network Coordinator, two Computer Support Specialists, and three permanent part-time Computer Lab instructional technicians.

Facilities

Clovis Community College has approximately 600 computers available to students, staff and faculty. There are 10 student computer labs with 336 (245 desktops, 91 laptops) computers for student use. Open computer labs at Clovis Community College have 103 computers available for use throughout the week. The other five labs support programs, including Business, Computer Science, Math, English, Art, Engineering, Geographical Information Systems (GIS), Mechatronics, Financial Aid and IT. The Herndon campus houses an additional lab for student use and workstations for faculty. Software available in the labs is standardized on Microsoft Office 2013/2016 along with specialized programs to support specific disciplines (e.g. Adobe Creative Cloud and AutoCAD). Regular classrooms are technology enabled with a computer, projector, sound and VCR/DVD's permanently installed. The staff and full-time faculty have either a laptop or computer assigned for their use with access to multiple printers and other resources. VDI (virtual desktop infrastructure) has been implemented in two of the instructional computer labs, the open lab, library stations and the Herndon campus computer lab.

The core networking and server farm at Clovis Community College are housed in the MDF (main distribution facility). Each building/floor has an IDF (intermediate distribution facility) that connects the building network equipment to the core via a fiber optic cabling. Copper Ethernet cabling support the link from the network switches in the IDF to the desktop. The server farm is composed of Dell equipment and it supports all the file, print, and software applications for both instructional and administrative uses.

Clovis Community College has three classrooms that are equipped with video conferencing equipment. The classrooms support distance learning classes, where the instructor is at one site teaching students at remote locations. There are also four conference rooms equipped with video conferencing equipment this allows staff/faculty to meet without having to drive to other facilities.

Instructional Use of Technology

Students encounter and utilize technology continually, from their initial contact with the college, in classrooms and labs, all which helps support their success. Additional student support is provided using Internet-based services. These include enrollment and registration applications and routing, transcript requests, and password resets for WebAdvisor.

Faculty have access to the Canvas course management system. Course sections and rosters are loaded into the system at the beginning of the semester. Each faculty member decides whether to use the application with textbook created modules or personally-created content. Students can access the

system from home and from numerous locations on campus, including the open computer lab. Students also use PCs for online test-taking and research for their courses. Within Canvas students are able to use plagiarism-checking programs.

All classrooms are “smart classrooms” utilizing a networked computer with a digital projector, presenter, and sound system. Technology-based courses such as Digital Media, Computer Aided Design and Drafting (CADD), and Computer Science (programming) use personal computers extensively to simulate their work environments. Hardware and software used in these courses are periodically assessed and upgraded to meet current industry standards, as expected by the faculty and students in these courses.

Clovis Community College provides full-time faculty members with an office computer and the Microsoft Office Suite and other software as needed. Adjunct faculty have access to similar equipment in a designated workspace. Faculty use the Colleague/WebAdvisor system for student and scheduling information, class rosters, and for final grade entry.

Technology Services staff provide instructor technical support. Many tutorials are online and the Computer Services staff is available for personal instruction and various training sessions.

Student Services and Administrative Use of Technology

Technology is used extensively by administrative and student services departments to meet the needs of students. Access to services is available on the Clovis Community College website and by Internet-based application providers, and students are directed to use WebAdvisor for enrollment and various status checks. Other state-based services provide student eligibility status tracking, loan and grant application and processing, and transcript requests.

Ellucian Colleague is an integrated database used for all of the major district functions, such as Human Resources, Financials, Student Records, and Curriculum Management. This database feeds information to all other systems, such as Canvas, Scheduling and Reporting System (SARS) and is the source of state and federal report content and institutional research data. Staff, counseling, faculty, and administrators use Colleague extensively throughout each workday and a substantial amount of the district’s technology staffing is required to maintain this software.

Ellucian Colleague is used extensively for district information and processes. Students interact with the system using WebAdvisor, and can update email and residence address information. Students also use WebAdvisor to register for classes. Students may also call a central help desk for assistance with WebAdvisor. Colleague records are updated with student contact information, and summary information is transferred for State MIS reporting and internal Institutional Research.

The [Clovis Community College website](#) is used in many ways. It provides resources and information for prospective, new, and continuing students, including registration, enrollment services, program offerings, articulation and transfer/career resources. The site is used to communicate district news and events with students and the community. The site also serves staff and faculty with links to departments and committees for reporting and communication.

New student applications are collected by CCC Apply, an Internet service partially funded by the Chancellor’s Office. This service is used by most California Community Colleges. Information is supplied

by applicants at the Web site then downloaded daily by the schools to which the individual has applied. The information is moved into Colleague automatically then verified by staff. Any individual exceptions are manually resolved before processing proceeds.

The counseling department utilizes online resources to provide a variety of student services for students and faculty. Many components of the matriculation process and retention efforts are available online. The Counseling Department has implemented an online academic counseling program; both a Frequently Asked Question Database (FAQ) and a Live Help Online Academic Counseling program. Additionally, students can complete a college orientation online, take a math and English placement test via Accuplacer (on campus or remotely), complete an online admission application (CCC Apply), and access Transfer and Career Counseling forms are available to counselors. Counselors are in the process of reviewing and implementing the E-Advising program which will allow students and counselors to complete and revise student educational plans online. Counselors have also implemented two online resources to assist in student retention; SARS Alert and an online probation workshop. SARS Alert provides an online resource for faculty to identify students early in the semester and provide them with appropriate resources and services. The online probation workshop provides students on a Level one probation with a four step online process that provides information on probation, steps to succeed and ultimately clearance for registration.

The counseling department also relies on online resources to assist students; including Assist (www.assist.org articulation agreements), www.csumentor.edu (CSU Admissions Application), Transfer Counselor Website, Blackboard organizations, and transfer college websites.

The SARS (Student Appointment and Recording System) Anywhere application is also used by student services departments to schedule student appointments, track walk-ins, schedule meetings, implement SARS Calls and E-mails, and generate reports on services provided. OnBase, an electronic document imaging is used to increase efficiency and responsiveness of Student Services, Financial Aid, and Admissions & Records.

The library at CCC uses OCLC's WorldShare Management (WMS) Cloud System to track all materials throughout the district libraries. The collection can be queried using any browser, but dedicated PCs connected to the Bibliotheca (formerly 3M) RFID Workstations are required for new item processing as well as the checking in and checking out of materials and subsequent deactivation and reactivation of the security of the materials being checked in and out of the library. California will be soliciting RFPs for an Integrated Library System (ILS) for all community colleges in late 2017 or early 2018. This would potentially replace OCLC WMS with a system selected and funded by the state by 2020.

The library website links out to the library's subscription databases. Access to these databases is authenticated using the LDAP through the OCLC EZ-Proxy. The library works with the Network Coordinator on maintenance. Access is granted to current students, faculty, and staff at CCC.

The library use the iMedia print card system to convert dollars into printing credits for use within the Open Lab.

All Tutoring Center hours are recorded using TutorTrac, and final contact hours summarized for State MIS reporting. The Business Office uses Colleague for all district purchasing and accounts receivable. The cashiers are able to accept credit and debit cards from students and secure transactions can be made through the Web site.

Identifying and Assessing Future Technology Needs

As technology continues to develop, improve, and diversify in its application, Clovis Community College staff are encouraged to request and implement technology tools in support of increased student success.

- Through annual action plan processes, staff submit requests for technology in support of classroom instruction. Action plans are reviewed by the college's Technology Committee and prioritized through input from the Department Chairs Council, President's Council and College Council.
- Staff are encouraged to request of the Dean of Instruction, STEM and Technology Services any innovative technology they may have seen in professional development presentations, conferences, or other avenues.
- Staff involved in the college's distance education program coordinate with the college's Technology Services staff to identify and implement emerging technologies to improve the delivery of online courses. Examples of technology supporting distance education courses, are Canvas, Turn-it-in.com, and Google Classroom and other online components to ensure that instructors and students are able to maintain regular and effective contact in their courses.

Refresh Model

Based on a review of technology plans from similar community colleges, the following refresh model is recommended to provide consistent quality and reliability of technology tools campus-wide.

Equipment Type	Cycle
<i>Computer Lab (General Use)</i>	5 years
<i>Computer Lab (Advanced)</i>	3 years – upgrade or replace as funding allows
<i>On-Premise Servers</i>	5 years
<i>VDI Terminals</i>	6 years
<i>Staff Laptops/Desktops</i>	5 years – See below regarding mid-cycle upgrades
<i>Network Infrastructure</i>	5-10 years – depending on physical layer (copper, fiber, wireless) and network load, congestions and equipment obsolescence.
<i>Technical Staff Computers</i>	2 years – machines are more heavily used and perform advanced functions (virtual imaging, test environments) directly related to providing service to the rest of the campus. Upgraded machines will be cycled to other uses.
<i>Classroom AV infrastructure wiring</i>	10 years
<i>Projectors Updated</i>	5 Years
<i>Phones (VoIP)</i>	As needed when phones are end-of-life (EOL) or as a result of a upgrade from the district call-manager
<i>Printers</i>	As needed

The above recommendations do not preclude mid-cycle upgrades such as improvements in RAM or HD capacity. Whenever possible, refreshed computers will be cycled to other uses. For example, refreshed staff computers may be used to expand student computer access or support IS/CSCI classes.

Hardware standards

The following standards will be updated periodically by the Technology Services Department with the intent that all new purchases will provide effective functionality throughout the expected life of the device.

Computer Component	High	Medium	Low
<i>Processor</i>	Intel Core i7/i9 or AMD equivalent	Intel Core i5 or AMD equivalent	Intel Core i3/m or AMD equivalent
<i>Memory</i>	16 gigabyte (GB) with expansion space for up to 32 GB or greater	8 GB with expansion space for up to 16 GB	8 GB
<i>Hard Drive</i>	256 GB PCIe SSD	256 GB SSD	128 GB SSD

All devices are to be procured with a minimum of 3-year hardware and support warranty. Accidental Damage Protection (ADP) coverage is highly recommended for all mobile (Laptop/tablet) devices.

Only devices designated business-class will be considered for purchase. The following are recommended hardware manufacturers for administrative and academic applications. Additional manufacturers may be considered after review from the Technology Services Department.

- *Dell EMC*
- *Lenovo*
- *Apple, Inc.*

Printer specifications:

The following specifications seek to improve efficiency of printing.

<i>Manufacturer</i>	Dell/HP/Canon
<i>Warranty</i>	3 years
<i>Toner</i>	High yield (if available)
<i>Features</i>	Duplex (2-sided printing by default) Networked (allowing wireless printing when possible) Scanning tray when requested by a department
<i>B/W or Color</i>	Unless there is a specific need, printers will be B&W. Campus-wide color printing is provided through the college's Canon multifunction copier/printers.

Facility Technology Guidelines

New construction or facility upgrades

District facilities in cooperation with district and campus IT departments will review standards for new classrooms, offices, and other meeting spaces. Current standards are as follows:

- At least 2 network drops in the ceiling
- 3 network drops in each plate
- CAT6a
- A/V - Projector, document camera, speaker system, optical disc (blu-ray)

Accessibility

All technology purchased and implemented within the college should meet the minimum standard outlined by [WCAG 2.0 AA, guidelines for accessibility](#). To ensure accessibility to technology by all college constituents, the following process is recommended for the review, purchase and implementation:

- Review of all action plans will include a check for accessibility guidelines.
- Establish workflow for all documents published to the website.
- New technology reviewed by the Technology Committee and the appropriate experts to ensure accessibility.
- Ongoing training will be provided by the college through flex and other opportunities.

A web accessibility workgroup will formulate a more detailed Web Accessibility Plan in accordance with District Web Accessibility Policy and the recommendations outlined by WCAG 2.0 AA Standard.

Disaster Recovery and Backup

The Technology Services Department uses a UPS (uninterrupted power supply) battery backup for the on premise datacenter to allow operation in the event of a power failure. The server operating system is patched at minimum every quarter and physical access to datacenter is restricted to ensure safety and security of hardware, software, and information. College IT staff work in collaboration with district IT staff to address on-site and off-site backup and disaster support of campus systems.

To address the requirement for off-site backup and disaster recovery, the campus uses Amazon Web Services (AWS) S3 and Glacier products for warm and cold backup. Critical campus files for faculty and staff are accessible within 24 hours in the event of a complete loss of on premise servers.

The backup and recovery plan will be tested at least twice a year to ensure recovery of data is possible.

Bring Your Own Devices (BYOD)

Faculty, staff, students, and members of the public have the capability to connect to the college wifi. For security, each group has different levels of access. Guests or the general public access the guest wifi only allowing access to the internet. The student wifi network is also restricted to access campus servers.

Staff login to the staff wifi network allowing access to network printers and shares on campus servers. Both the staff and student wifi use 802.1x authentication allowing user auditing when needed.

References

- Alpha Numeric Systems, Inc. “12-step Technology Refresh Deployment Checklist”
- Cuesta College Technology Plan 2012-2017
- Long Beach City College Technology Master Plan 2013-2018
- Moorpark College Strategic Technology Plan 2016-2019
- Santa Barbara City College District Technology Plan
- USC IT Recommendations (<https://itservices.usc.edu/recommendations/>)
- [W3C \(World Wide Web Consortium\)](#)