



Technology Master Plan

2016-2020

EXECUTIVE SUMMARY

Ohlone Community College District (District) adopted the 2015-2020 Strategic Plan focusing on student success and institutional effectiveness. The strategic plan has provided the framework for all other plans the District will implement to fully utilize resources to achieve its goals. These plans include the Educational Master Plan, Facilities Master Plan, Equal Employment Opportunity Plan, Master Safety Plan, and Site Security Systems Master Plan. However, the strategy toward the efficient and effective use of information technology resources has been the missing component.

The Technology Committee is the collegial body charged to ensure the effective use of the District's systems and technology. Working collectively as a group and subgroups, the Technology Committee developed a road map for the effective use and delivery of technology resources consistent and aligned with the District's 2015-2020 Strategic Plan. The Technology Master Plan's goals and objectives answered the strategies needed to fully support and embrace student success and institutional effectiveness consistent with the 2015-2020 Strategic Plan's goals 1, 2, and 4, and goals 6 and 7, respectively.

The concept of universal design is of great importance because of the District rich diverse culture. This principle is embedded as a fundamental philosophy in implementing systems and technology. Embracing the concept of universal design empowers the District to further inculcate and promote inclusiveness and diversity through its technology resources.

The Technology Master Plan has four distinct goals. The goals address the functional use of information systems and technology across the District. Goal 1 focuses on instructional or academic technology, which includes systems or technologies that directly affects teaching and learning. Goal 2 focuses on institutional or administrative technology, which includes systems or technologies that affects service delivery, decision-making, information dissemination, and knowledge-sharing. Goal 3 focuses on the underlying infrastructure that enables other systems and technologies to function. Finally, Goal 4 focuses on information security, which is an added importance to protect sensitive and personally identifiable information. All goals include training as an embedded activity to ensure the preparedness of students and/or employees in using the technology resources. There is a total of 25 objectives spread across the four goals.

The approval of the Technology Master Plan by the Board of Trustees precedes the annual development and review of the action plans/initiatives to operationalize the goals and objectives. The action plans will serve as the deliverable items required to ensure the completion of the goals and objectives. Furthermore, the action plans align with the annual priorities of the District as defined during the planning and budgeting process; thus, integrating the implementation of the Technology Master Plan with the planning and budgeting process of the District.

THE TECHNOLOGY COMMITTEE MEMBERS

As part of the rich collegial governance culture of Ohlone Community College District, this Technology Master Plan was an instrumental accomplishment and achievement of the Technology Committee. The members of the 2015-2016 Technology Committee are as follows:

VOTING MEMBERS

Jeff O'Connell (Co-Chair)	Assoc. Professor, Science, Engineering, and Mathematics
Lesley Buehler	Dean, Business, Technology, and Learning Resources
Patrice Birkedahl	Director, College Advancement and PIO
Lynn Hickson	IT Support Lead Technician, Technology Services
Jennifer Hurley	Assoc. Professor, Languages and Communications
Margaret Lee	Adjunct, Science, Engineering, and Mathematics
Mike Martinez	HVAC Maintenance Mechanic, Facilities
Ben Peralta	Campus Police Officer, Campus Safety and Security
Kathleen Schoenecker	Administrative Systems Analyst, Information Systems
Tracy Virgil	Assoc. Professor, Languages and Communications
Laura Weaver	Dean, Enrollment Services

EX-OFFICIO MEMBERS

Dr. Gari Browning	President/Superintendent
Dr. Leta Stagnaro	Vice President of Academic Affairs and Deputy Superintendent
Dr. Christopher Dela Rosa (Co-Chair)	Associate Vice President, IT Services
Shairon Zingsheim	Associate Vice President, Human Resources & Training
Steven Reeves	Director, Technology Services
Shaun Vetter	Interim Director, Information Systems
Diana Garza	Executive Assistant to the AVP of IT Services
Michael Moore	Assistant to the Vice President for Academic Affairs

THE MISSION OF OHLONE COMMUNITY COLLEGE DISTRICT

Ohlone College responds to the educational needs of our diverse community and economy by offering high quality instruction supporting basic skills, career development, university transfer, and personal enrichment and by awarding associate degrees and certificates to eligible students in an innovative, multicultural environment where successful learning and achievement are highly valued, supported, and continually assessed.

THE VISION OF OHLONE COMMUNITY COLLEGE DISTRICT

Ohlone College will be known throughout California for our inclusiveness, innovation, and exceptional student success.

THE VALUES OF OHLONE COMMUNITY COLLEGE DISTRICT

Excellence

- We empower students and employees to achieve at their fullest potential, encouraging all to engage in ongoing learning through high quality education and continuous institutional improvement.

Inclusiveness

- We actively reach out to and support students and employees from various backgrounds, socio-economic groups, ages, and abilities to explore their interests in order to define and fulfill their goals. We strive for a diverse workforce that honors and upholds the contributions of all.

Innovation

- We strive to be risk-takers in order to generate new ideas in college planning and the curriculum that inspire students, faculty, and staff to optimize student learning. We endeavor to meet the entrepreneurial and technological needs of the college community to serve and support students.

Integrity

- We practice transparent communication, emphasizing respect, trust, and honesty among students, employees, and the communities we serve in a climate where everyone feels heard and engaged.

Stewardship

- We engage in shared governance to provide an exemplary model of stewardship for human, financial, physical, technological, and environmental resources to maximize institutional effectiveness and efficiency.

Success

- We provide the necessary tools and support to assist students and employees in defining goals, and measuring their success by the attainment of those goals.

TECHNOLOGY AT OHLONE COMMUNITY COLLEGE DISTRICT – THE MISSION

Ohlone Community College District serves and supports the college community by responding with innovation and state-of-the-art technology aligned with the District's strategic goals.

TECHNOLOGY VISION

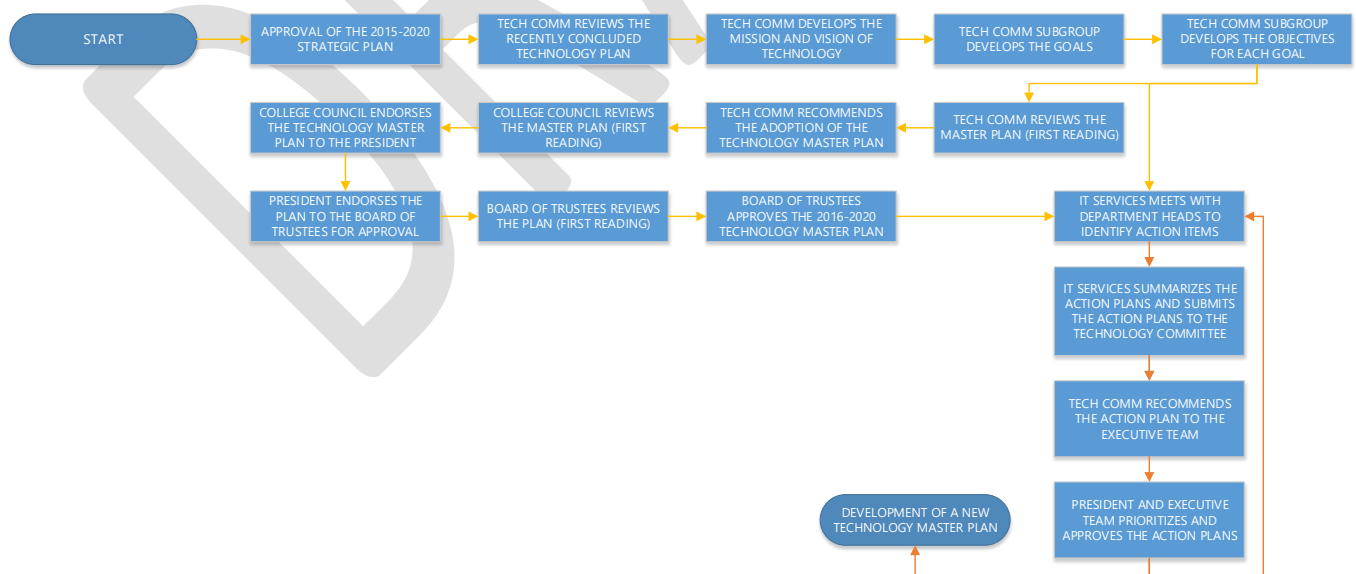
Technology at Ohlone College will be universal, state-of-the art, innovative, available, and continually assessed in advancing the mission, vision, goals, and objectives of the District.

FRAMEWORK OF THE PLAN

The Goals. The Technology Master Plan goals revolve on the functional aspect of information technology. IT has grown and has been embedded in the core operations of all organizations, including higher education. The goals are a result of following classifications and categories that IT addresses – both on the systems and technology perspective. The goal is considered complete when all objectives under the goal have been completely addressed.

The Objectives. The Technology Master Plan’s objectives are from the deliberation and discussion among the Technology Committee members, which focused on areas that technology would address a problem or would meet a specific need. The objectives are time-bounded with explicit outcomes. The action items will enumerate the specific activities or projects to meet the objective. In the end, the District meets the objective when all action items or projects have been completed.

The Process. The Technology Committee is the primary driver in developing the Technology Master Plan. In adhering to the collegial governance process of the District, the plan has to go to the College Council. The College Council, serving as advisory to the President/Superintendent, endorses to the President the adoption of the plan after the Technology Committee finalizes the plan. The final step is the approval of the Board of Trustees. The flowchart of the development and approval process is shown below.



* Tech Comm stands for the Technology Committee for purposes of the flow chart.

The action items will be developed separately and will be updated on an annual basis to ensure the relevance and currency of each action item or initiative. This is in recognition of the ever-changing technology landscape and the District priorities as the plan relates to the planning and budgeting processes. The President and the Executive Team will consider the technology-related initiatives/action items to align with the District's priorities and to ensure the most effective use of the limited resources available.

METHODOLOGY

The Technology Committee served as the lead proponent to develop a comprehensive plan for integrating the District's systems and technology initiatives with the District's 2015-2020 Strategic Plan, the Educational Master Plan, the Student Success and Support Program Plan, the Student Equity Plan, the Basic Skills Plan, Site Security Systems Master Plan, Facilities Master Plan, the Equal Employment Opportunity Plan, the marketing and branding initiative, and other plans and initiatives for the District. These plans and initiatives served as the impetus in developing the mission, vision, goals, and objectives. Likewise, action items and initiatives on the Technology Master Plan emanated from these plans and initiatives.



Ohlone Community College District Strategic Plan. The development of the Technology Master Plan started upon approval of the 2015-2020 Strategic Plan of Ohlone Community College District by the Board of Trustees. The rationale was to align and to ensure relevance of the technology goals and objectives with the strategic goals and objectives of the District. Likewise, the District's strategic plan included three objectives directly attuned to the Technology Master Plan under Goal 6.

Strategic Goal 6 – Use human, fiscal, technological, and physical resources responsibly, effectively, efficiently, and sustainably to maximize student learning and achievement, using established planning processes.

Strategic Objective 25 – Develop and maintain technological systems that support college effectiveness and efficiency.

Strategic Objective 26 – Continuously maintain and improve a technology infrastructure to support students and staff effectively as assessed through biannual surveys.

Strategic Objective 30 – Implement the goals of the Technology Plan.

Environmental Scanning. The Technology Committee evaluated the previous technology plan and highlighted the accomplishments. This served as the first part of the environmental scanning process. The committee identified the outstanding action items from the previous plan and determined the relevance. As technology changes, determining the relevance of action items was an important step to take. With the assistance from the different divisions and departments, the second part of the environmental scanning

took place. Identifying the existing systems and technology and evaluating the extent of configuration and usage was a key in determining the effective and efficient use of systems within the District's technology environment.

Another key item is the academic core building (ACB). The ACB serves as a strategic initiative of the District and will require technology as its backbone. This is an opportunity for the District to implement a modern and responsive technology solution with mobility, security, and availability as critical components.

The discussion regarding safety and security has prioritized the need for technology and systems related to safety and security. A working and fully integrated technology solution is critical for operations. Facilitating the ease-of-use is an essential component to a successful response to any safety and security related undertaking.

Finally, the District is known throughout the state for its high-achievement ranking and with its service to the Deaf Community. With this, the need to adhere to the principle of universal design is essential and critical to ensure technology is responsive to the needs of the college community and is embracing the diverse and rich culture of Ohlone.

Mission and Vision. An essential element of a good master plan is adhering and aligning with the over-arching strategic plan. In this case, the Ohlone Community College District's 2015-2020 Strategic Plan serves as the over-arching plan, which technology should address. The Technology Committee opened the avenue for developing a mission and vision statement consistent and aligned with the District's mission and vision statements. Using the District's core values, the Technology Committee did not see a need to develop a separate and distinct core value for technology because of the overarching applicability of the District's core values.

Goals and Objectives. The Technology Master Plan followed the framework of the District's 2015-2020 Strategic Plan. Goals and objectives provide the mechanism for achieving the mission and vision of technology for the District. The District's core values serve as principles on how to attain these goals and objectives.

Action Plan. Action plans will be developed to operationalize the goals and objectives. The action plans will be the collective work of all department and division heads in coordination with IT Services and with the Technology Committee. The action plan will be revisited annually as part of continuous quality improvement and as part of determining the relevance and currency of the technology and/or system.

CONTINUOUS QUALITY IMPROVEMENT

As part of continuous quality improvement, there are two stages requiring assessment. The first is on the process of developing the plan. This is focused more on improving the processing of developing the master plan to aid in future master plans. The second is on the actual plan itself. The content assessment is to ensure the relevance and currency of the action plans.

Developing the Plan. As part of improving the process for the development of the next technology plan, the Technology Committee will be engaged in assessing the effectiveness of the framework and in soliciting feedback to improve the process. The result of this assessment will serve as the impetus either to keep the current framework and methodology or to change the process. The outcome is to ensure there is input from all groups on campus or at least to exert all efforts to participate.

Action Plan Review and Update. On an annual basis, the Technology Committee will review the action items of each goal/objective and determine the relevance and currency. Relevance is in alignment with the need of the District (or a department/division) to implement the system or technology in addressing a need or in solving a problem. On the other hand, currency is the viability of the specific system or technology solution during the time of planning and implementation. Currency is more on the specific solution intended for the problem or need relevant to the District. The Technology Committee will update and will recommend the action items for implementation.

INFORMATION SYSTEMS AND TECHNOLOGY AT THE DISTRICT

As part of environmental scanning, the District has implemented either partially or completely these technologies and how these technologies stand in terms of new trends. This will provide the baseline in determining advancement in technology and systems attuned to the needs of the District.

Classroom and Laboratory Technology. The standard classroom setup includes a desktop, a wall controller, a projector, and a ceiling-mounted speaker system. However, the maintenance and replacement of equipment on classrooms may be costly. There may be options to implement classroom technology at a lesser and more cost-effective way but achieve the same goals, ease of use, and availability.



The laboratory setup includes a set of computers. The number of computers depends on the physical room size and the class size. The lab setup varies between Microsoft Windows-based, Mac OS-based, or dual boot machines. The type of machine deployed on a lab depends on the courses offered on the class with specific platform and/or software requirements. Sharing of labs is also evident on campus to maximize the use of these labs that requires significant investment. A review of the usage may help the District identify new labs to meet the demands of the ever-growing technology-based instruction.

The Newark campus uses laptop carts. The concept of mobility has been implemented at the Newark Campus since its inception and presently addresses the need of the classes at Newark. However, operational procedures may require a re-assessment to ensure that the technology meeting the needs. Once the ACB is operational, there may be a need to use laptop carts following the Newark campus model.



Windows 8



The District has a variety of computer operating systems implemented – Windows 7, 8, and 10. There is an opportunity to standardize on a single operating system once computers are replaced. Standardizing will provide easier support when issues arise and easier management and administration of new computers.

In recent years, higher education started to deploy virtual desktop infrastructure (VDI) or virtualization on Windows-based labs, classrooms, and offices. This is an opportunity for the District to explore the advantages of VDI. Though this not result to lower total cost of ownership, implementation from other institutions saw an improvement in service delivery and less downtime in managing and administering computers. Newer VDI implementations extend the use to address personally owned devices (bring your own devices or BYOD).



Wired and Wireless Technology. All buildings and campuses are fully equipped with wired infrastructure both for phones and data. The wired network infrastructure supports our information data network used for teaching and learning and in the day-to-day operations of the District. As the technology changes, this may be an opportunity to upgrade old cabling standards to newer standards that comply with the standards adopted by the Institute of Electrical and Electronics Engineers (IEEE) and governmental agencies.



In the same way, there is an opportunity to improve on wireless technology following the latest IEEE 802.11 standards. While the Newark Campus has a single type of wireless access point, this has not been the case for the Fremont Campus and needs to be addressed to ensure compatibility and consistency. Aside from coverage, another factor to consider is capacity.

ERP System. Ellucian's® Colleague system is the District's ERP system. The system includes the student information system, the financial and accounting system, and the human resources and payroll system. A review of the District's adoption and practices may be used for business process re-engineering. The purpose is to ensure efficiency and effectiveness affecting the delivery of services to students and employees. The Colleague web interface used by both students and employees is WebAdvisor.

Colleague® by Ellucian

The current platform Colleague uses as its database is Unidata. Ellucian recommended moving the database from Unidata to Microsoft SQL server. This will enable the system to be more robust and easier to support. Presently, there are more Microsoft SQL server professionals than Unidata experts available to provide support when there is a need.



The District has also adopted third-party systems to supplement the functionality of Colleague. Although there are third-party systems in place, the authoritative system resides with Colleague. Colleague drives the creation of network user accounts and the ability of students and employees to access different systems. A review of the integration strategy of third-party systems with Colleague is important to ensure data accuracy and integrity.

Course Management System. The District adopted the Instructure® Canvas platform as its official course management system recently. This is an opportunity to fully synchronize provisioning of courses and course information from the District's ERP system. The adoption is part of the Online Education Initiative from the California Community College's Chancellor's Office. The adoption would open opportunities for online course exchange among the other 112 community colleges across the state participating in this program. Training for faculty



and students is an essential element of a successful adoption. Helping and assisting the faculty to migrate their course content from the old platform to Canvas is also necessary.

Document Retention and Management. The District has started implementing document management with built in workflow. Admissions and Records has adopted document management using Lexmark's ImageNow system, which interfaces with Colleague. There is an opportunity to expand the use of document management to other areas of the District after developing a document retention procedure standard across the District considering applicable laws and statutes governing electronic document retention.



Reporting and Data Gathering. With Colleague as the primary source of information, there is an opportunity to increase the use of Entrinsik's Informer for business intelligence. Customization of reports in Colleague may be avoided using this tool. Expanding the use of the tool to analyze and synthesize data from various data sources enables the District to use disparate data for a more comprehensive data-driven report generation and decision-making.



Electronic Mail System. The District's electronic mail system for employees is running on the Microsoft Exchange server version 2010. This includes the calendar, contacts, and notes. There is an opportunity to provide the same service with minimal support required using cloud technologies. This will expand the use and improve the availability of service.



One of the factors to consider is compatibility with the existing domain infrastructure, migration, and security. Various cloud service providers have different ways of handling and storing email services throughout the country. The District may want to consider email storage as factor in selecting the cloud-service provider. The location of the data storage is a great concern among various higher education institutions in the United States in ensuring the privacy of their students and employees.

The District does not provide an email platform for its students. Official communication to the students is through their personal email accounts. It is good practice to provide an official email to ensure all communications. In terms of usage, it is encouraged that students are provided the option to forward their email to their personal email accounts. Providing the students an email account does not only allow an effective delivery of email notifications to students, but also provide the students an opportunity to use free licensing of specific software. The two leading free cloud-based email platforms are Google Apps and Microsoft Office 365.

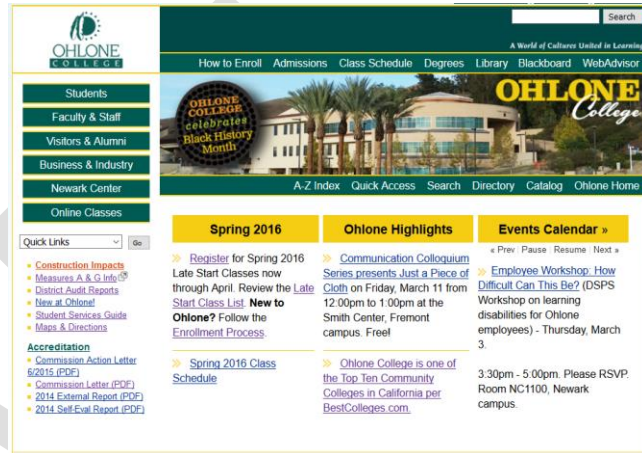
Phone System. The District has started using voice over IP (VOIP) phones in the offices located in the portables. This has been a good test on how VOIP technology can replace the analog phones predominantly deployed on both Fremont and Newark campuses. This can also provide an opportunity to expand the implementation of phones in all classrooms using this technology. Service phones (phones located on elevators, facsimile lines, the blue phones, and the like) must remain analog to ensure continuity of service in the event of power and/or network disruption.



Information Security. Protecting information is a primary consideration when deploying systems/technology and providing access to users. The challenge in balancing security of information and access to information is the ever changing modality of the technology and the way people use the technology. Awareness is critical for prevention. Information security awareness must be embraced within the District to enable users to be aware and cautious in using online systems and technologies. At the same time, the District need to develop procedures and protocols in addressing scenarios of breaches covering network breach, exposure of personally identifiable information, and both.



Web Presence. The District's website met the needs of the District when it was launched in late 2000's. With the recent developments in web technologies, responsive design must be the primary consideration. Responsive design is the ability of the website to change its appearance depending on the type of device used (computer, tablet, and smart phones). There is also an opportunity to decentralize the process of updating webpages to provide departments and divisions the ability to update their content timely and, at the same, the District applying consistency on design and format using a modern content management system.



* The images are copyright of their respective owners.

ALIGNMENT OF TECHNOLOGY GOALS WITH THE DISTRICT'S STRATEGIC PLAN

The Technology Committee ensured the alignment of the Technology Master Plan with the District's 2015-2020 Strategic Plan. The alignment ensures the responsibility of information systems and technology to the District's strategic goals and objectives. The expectation is for the Technology Master Plan to serve as a guide on how information systems and technology at Ohlone responds to the strategic goals and objectives of the District and how IT Services will collaborate with other departments and divisions to achieve their goals, to solve problems, and to share information and knowledge.

GOALS

Consistent with the mission and vision of technology at Ohlone Community College District and with the values of the District, technology will pursue the following goals. These goals integrate systems and technology in the core and auxiliary functions of the District to support student success and to achieve efficiency and effectiveness.

GOAL 1 – INSTRUCTIONAL TECHNOLOGY

- Provide all learning spaces with the appropriate technology to promote the exchange of ideas for learning and for achieving student success.

GOAL 2 – INSTITUTIONAL TECHNOLOGY

- Provide an environment with the most appropriate tools for effective and efficient communications, service delivery, problem-solving, decision-making, and knowledge-sharing in a timely manner.

GOAL 3 – TECHNOLOGY INFRASTRUCTURE

- Provide a technology infrastructure integrating innovative and state-of-the-art systems and technology that are flexible, scalable, available, adaptable, and accessible.

GOAL 4 – INFORMATION SECURITY

- Provide an environment balancing the availability of information with securing the sensitive and confidential information of all stakeholders.

OBJECTIVES

To measure the accomplishment of each goal, the Technology Master Plan includes these objectives.

GOAL 1 – INSTRUCTIONAL TECHNOLOGY

- Objective 1.1. By 2019, implement physical classroom/lab spaces responsive to the needs of faculty and students.
- Objective 1.2. By 2017, implement virtual learning spaces responsive to the needs of faculty and students.
- Objective 1.3. By 2020, implement systems and technology to complement student learning consistent with the student success and support programs, basic skills, and student equity.

GOAL 2 – INSTITUTIONAL TECHNOLOGY

- Objective 2.1. By 2020, implement a comprehensive training program addressing current and evolving technology needs for employees.
- Objective 2.2. By 2019, implement the use of business intelligence tools to support decision making and strategic planning accurately and in a timely manner.
- Objective 2.3. By 2020, implement technologies for timely communication with the college community.

- Objective 2.4. By 2020, implement process re-engineering for effective service-delivery enhancing the District's efficiency and effectiveness and leverage on the use of the District's Ellucian® Colleague system for data collection and data retrieval by using bolt-on applications
- Objective 2.5. By 2020, define the data retention procedures and implement document management across the District.
- Objective 2.6. By 2020, implement a portal for the District integrating self-services for students and employees.
- Objective 2.7. By 2019, implement systems and technology to streamline student-related processes aligned with admission, retention, progression, and completion.
- Objective 2.8. By 2017, develop and launch a modern and responsive website for the District adhering toward universal design and the principle of inclusiveness and diversity.
- Objective 2.9. By 2017, implement a comprehensive mass notification system for emergencies and for marketing using various media.
- Objective 2.10. By 2018, implement systems attuned to the needs of the District and the college foundation in engaging the college community.

GOAL 3 – TECHNOLOGY INFRASTRUCTURE

- Objective 3.1. By 2017, implement a robust, flexible, and scalable wireless technology infrastructure in all learning and operational spaces across the District.
- Objective 3.2. By 2019, implement a robust, flexible, and scalable wired technology infrastructure at both campuses.
- Objective 3.3. By 2020, adopt cloud technology on applicable systems as an extension of the College's technology infrastructure to ensure continuity of critical services.
- Objective 3.4. By 2020, stabilize the replacement of computers, network equipment, and other technology equipment following a periodic cycle to maintain currency.
- Objective 3.5. By 2019, implement virtual technology on both desktops and infrastructure for enhancing efficiency and for promoting sustainability.
- Objective 3.6. By 2020, implement a robust, flexible, available, and scalable systems and services District-wide.
- Objective 3.7. By 2020, implement a robust, flexible, available, and scalable systems and services District-wide.

Objective 3.8. By 2019, fully implement the technology infrastructure required to support the completion of the District's security systems master plan.

GOAL 4 – INFORMATION SECURITY

Objective 4.1. By 2020, implement best practices in higher education information security in all major District-wide information systems and technologies such as student information system, finance and accounting system, HR and payroll systems, room management, content management system, course management system, and electronic mail system.

Objective 4.2. By 2020, implement a District-wide information security awareness program for all students and employees.

Objective 4.3. By 2020, adopt board policies and administrative procedures reflecting best practices in information security.

Objective 4.4. By 2018, implement a single credential to access all major information systems and other major technology services.