

Northern Virginia Community College
STRATEGIC TECHNOLOGY PLAN
(2019-24)
Approved by Administrative Council May 21, 2019

INTRODUCTION

The 2019-24 Northern Virginia Strategic Technology Plan is based on the work of several committees composed of a broad cross section of faculty and staff from across the college over the past three years. They reviewed NOVA's current strategic technology plan; the results of multiple surveys of faculty, staff, and students; and literature on technology trends affecting higher education and its students. They spent hours discussing the details of what NOVA needed from its technology to support the College's strategic plan, its academic programs, its students, and to maintain its place as one of the nation's top digital community colleges. The 2019-24 Strategic Technology Plan represents a mix of the needs, goals, aspirations, and values that will guide College's technology planning and spending over the life of the plan. It represents those important technology elements that are currently part of NOVA's technology environment that are important to maintain, as well as those things that we must achieve by the end of the planning period in 2024.

The plan focuses on 12 key technology goals that represent our technology priorities. For each of these goals, there are more than 150 specific objectives that define how the College will achieve those priorities and how it will track progress and measure success at achieving those priorities. These are meant to be clear statements of what committees who developed this plan felt were critical to student success and student completion over the next six years. They are also what our technology-rich community should expect of its community college.

WHY TECHNOLOGY IS IMPORTANT

Technology is ubiquitous and it is our obligation to make sure our students, faculty, and staff are adequately prepared in its use. Technology is an important component of almost everything done at the college. It is not the reason for doing things or the driving force behind the things we do (other than in those academic programs that are focused on technology); it is important because it adds significant value to our academic programs and critical efficiencies to our administrative processes. Our students repeatedly report that it is important to helping them learn in their classes, and tell us when our processes are inefficient and out of date. The research on the value of technology bears this out as well. Our students expect us to use technology and personally use technology very differently today than even a few years ago.

Technology expands the limits of classroom or a textbook, and can add to the richness of every student's experience at the college. Through technology, faculty can expand or shrink time and place to show students things in ways that go beyond what words alone would allow. Technology allows faculty to simulate and demonstrate things that cost or safety factors would never allow. Technology also allows faculty to shrink or expand the size of things to make the tiny visible or the very large comprehensible. Students learn in a variety of ways, and need different amounts of time to master content. Technology can help address those differences.

Technology is also important in the administrative aspects of the college's operations. It not only allows for efficiencies that address issues of cost and scale, it can provide more efficient and consistent service to the college community. This allows the college to direct more of its scarce resources to face-to-face interaction in places where it is needed most—whether in a classroom or at college service point.

The following are the 12 goals set of the Northern Virginia Community College 2019-24 Technology Strategic Plan.

- I. All classrooms will have up to date¹ technology for instructors and students to enhance teaching and learning.**
- II. The College will have a state-of-the-art online learning environment, employ up to date instructional technology, and significantly reduce the use of paper in classes.**
- III. All College services and transactions will be accessible and able to be completed virtually.**
- IV. Faculty, staff and students will be proficient in the use of up to date educational technology.**
- V. There will be a robust infrastructure capable of supporting up to date use of technology throughout the College.**
- VI. The College will take advantage of enhanced opportunities for virtual communication and collaboration among faculty, staff, and students.**
- VII. The College will implement an Integrated Planning and Advising System for Students (IPASS) College-wide.**
- VIII. The College will be recognized as a national leader and innovator in the use of technology.**
- IX. The College will provide remote work capability for all College employees that includes access to appropriate College resources including College software applications, secure web storage, document imaging, voice-over-IP communications, video conferencing, and online collaboration tools.**
- X. The College will utilize technology to make robust access to information easier from any location.**
- XI. The College will use technology to provide elements of NOVA student life experience available online.**

¹ For the purposes of the Strategic Technology Plan, the term “up to date” does not mean bleeding edge or the most recent technology available. The term refers to technology used in colleges identified as lead colleges. It is the technology identified by such organizations as Educause, Gartner, The Center for Digital Education, and the League for Innovation in Education as advanced mainstream or better. The term “up to date” means that software will be no more than one version behind the most current release, and that technology devices will still be covered by manufacturer support—even if a warranty agreement does not exist.

XII. The College will have collaborative relationships with other partners to expand the availability of resources and expertise.

NOVA'S SPECIFIC TECHNOLOGY OBJECTIVES

For each of the 12 Goals in the Strategic Technology Plan, there are multiple objectives that define how the College will achieve those priorities and how it will track progress and measure success at achieving them. Since NOVA has been among the nation's top digital community colleges for the past decade, it has already accomplished many of these objectives. However, the plan seeks to highlight those items to ensure that are not overlooked or diminished in the effort to achieve those objectives that represent new aspirations and challenges. In some cases, there is overlap and duplication of objectives among the goals. This is intentional and was done for the purpose of clarity in defining each goal. There is no assumption that the College will achieve all of these objectives in the first year of the plan. They are meant to paint the picture of where the College should be by 2024. By providing this level of detail, it is more likely that the College will achieve its goals than if the plan only stated general goals.

Following each objective is a reference to how each one will be measured over time. The key to these codes is as follows: [C] through a count or direct measurement, [S] through a survey, [Y/N] observation of evidence that the objective has been met where a count or survey is less meaningful. Where further detail on the measurement of these objectives is needed, footnotes are provided.

The following are NOVA's specific 2019-24 Technology Objectives:

I. All classrooms will have up to date technology for instructors and students to enhance teaching and learning.

The College will....

- a. Ensure 100% classrooms are electronic classrooms with a computer and projector or flat panel screen. [C]
- b. Maintain at last 95% of classrooms as up to date enhanced classrooms with electronic podiums, document cameras, network connectivity, HD monitor, audio enhancement control, projector or flat panel screen. [C]
- c. Provide Multi-touch displays (smart board capability) appropriate to room size in at least 75% of classrooms. [C]
- d. Provide audio/video functionality to allow multiple images on screens in at least 50% of classrooms. [C]
- e. Provide internet access for student devices in all classrooms. [C]
- f. Provide faculty with access to monitor each student's computer in all computer classrooms. [C]
- g. Equip all classrooms for Lecture capture (audio and video). [C]
- h. Provide technology and procedure for faculty to easily create transcripts of video used in classes [Y/N]
- i. Provide every classroom with sufficient wireless access to function as a computer classroom. [C]
- j. Provide at least 5 laptop or tablet carts available for checkout to faculty on all Campuses. [Y/N]

- k. Publish a classroom design manual for renovations and construction to support active learning and electronic classroom design. [Y/N]
- l. Ensure that at least 100% of all classrooms meet College technology standard equipment configuration set-up and environmental aspects such as screen(s) visibility and sight lines. [C]
- m. Maintain classroom technology so that it works reliably at least 95% of the time and is refreshed on a regular schedule. [C²]
- n. Have a standard for student classroom furniture that accounts for technology use. [Y/N]

II. The College will have an up to date online learning environment, employ up to date instructional technology, and significantly reduce the use of paper in classes.

The College will . . .

- a. Demonstrate the robustness of the online learning environment at NOVA with at least 50% of all sections have online supplemental instruction (links to existing or created resources). [S]
- b. Make instruction delivered through technology accessible on appropriate student-owned mobile devices in at least 80% of classes. [C³]
- c. Require that all faculty use the College LMS to post a basic set of class information as established by the Academic Deans Council. [C]
- d. Reduce paper assignments/exercises and paper copies for students in classes by making more use of the LMS and online tools. [S⁴]
- e. Require that all faculty keep their grades electronically. [C]
- f. Provide capability on all Campuses to deliver live synchronous classroom-based classes electronically so students can attend from different locations connected seamlessly into one section. [Y/N]
- g. Deliver interactive online synchronous class meetings to student devices. [Y/N]
- h. Deliver interactive online synchronous classes to remote sites. [Y/N]
- i. Allow students to provide class feedback/responses to the instructor from mobile devices in real-time. [Y/N]
- j. Provide a student technology production lab on all Campuses. [Y/N]
- k. Increase the number of faculty using curriculum software (software used by students as a part of the course) by 50% of Academic Year⁵ 19 levels. [C⁶]
- l. Increase the availability of instructional software in the College cloud by 50% of Academic Year 19 levels. [C]
- m. Provide all faculty and staff with access to demonstration rooms to test technology and provide feedback before purchase. [Y/N]
- n. Implement procedures and policies that support experimentation with new technology. [Y/N] and [S]
- o. Increase access to online library resources by 25% over Academic Year 19 levels. [C]

² Count classroom trouble tickets and time to resolve

³ Inventory of mobile version of current software

⁴ Goal of 100% of faculty report reducing handouts

⁵ The Academic Year is Summer-Fall-Spring

⁶ Count of purchases/licenses.

- p. Increase use of online library resources and online support requests by 25% over Academic Year 19 levels. [C]
- q. Provide faculty and staff with access to a web presence on the NVCC website. [Y/N]
- r. Increase use of online video as part of courses by 50% of Academic Year 19 level. [C]
- s. Expand use of augmented and virtual reality, simulations, and artificial intelligence in instruction BY 25% of Academic Year19 level. [S]
- t. Create 3-d Virtual labs for science and other labs that can be used from other Campuses or off-site locations. [Y/N]
- u. Implement augmented reality tools so faculty can add layers to visuals. [Y/N]

III. All College services and transactions will be accessible and able to be completed virtually.

The College will . . .

- a. Establish formal procedures for determining and limiting what information or services must have enhanced security (VPN, login, etc.) [Y/N]
- b. Maintain a responsive website that meets ADA requirements. [Y/N]
- c. Provide online access to all services through the College's responsive website so they are easily available on mobile devices. [Y/N]
- d. Increase the services delivered through dedicated mobile apps by 100%. [C]
- e. Increase the information delivered through voice technology (e.g. Amazon Echo) by 200% over Academic Year19 levels. [C]
- f. Make all College forms available in an electronic format with automated workflow. [C]
- g. Allow all users to digitally sign and route all forms. [C]
- h. Implement procedures developed by the Academic Deans Council that allow faculty on all Campuses to hold some virtual office hours for students who cannot or choose not to come to Campus. [Y/N]
- i. Use artificial intelligence technology for responding to information requests. [Y/N]
- j. Utilize up to date payment methods including web check and credit card, mobile credit card payment for activities, and mobile pay. [Y/N]

IV. Faculty, staff and students will be proficient in the use of up to date educational technology.

The College will . . .

- a. Require that all teaching faculty are certified in the College's LMS and trained in the use of electronic classroom technology [Y/N] and [C]
- b. Establish a required minimum technology training requirement for faculty and staff. [Y/N]
- c. Provide robust documentation and training on all technology tools supported by the College. [Y/N]
- d. Require that all faculty and staff complete training on the minimum College technology requirements within one month of starting work at NOVA. [C]

- e. Provide frequent offerings of common technology training in a variety of formats to faculty/staff so they can meet the College's technology expectations. [C⁷]
- f. Encourage all students to meet the minimum technology competencies established by the College Information Technology Committee for all students (including those for taking hybrid and online courses) within their first semester. [Y/N]
- g. Provides frequent student technology training in a variety of formats so they can meet the College's technology expectations. [C⁸]
- h. Provide a teaching and learning technology support Center with proportional staffing on every Campus that offers a standard set of face-to-face training, one on one support, and collaboration opportunities for faculty, staff, and students. [Y/N]
- i. Will have a defined set of proficiencies for IT staff to maintain in current technologies used at the College with regularly scheduled training available to them to achieve proficiency. [Y/N] and [C] of training
- j. Provide IT Staff training as part of all new system implementations. [Y/N]
- k. Establish a rewards and recognition program for IT staff to encourage retention of talented human resources. [C]

V. There will be a robust infrastructure capable of supporting up to date use of technology throughout the College.

The College will . . .

- a. Provide wireless access at current standards everywhere in the College. [C]
- b. Implement alternate means of access for critical IT systems. [Y/N]
- c. Provide single sign on for all systems, assuming adequate security can be maintained. [Y/N]
- d. Provide a single portal for Faculty, staff, and students to find and log on to all password protected systems for which they have access. [Y/N]
- e. Provide all faculty, staff and students with access to cloud computing and storage for completing, submitting and storing assignments and work. [Y/N]
- f. Make appropriate assistive technology available in all academic support areas and on demand in classrooms. [Y/N]
- g. Make all College software and systems available 24x7x365 [Y/N]
- h. Make all new College systems mobile accessible. [Y/N]
- i. Implement automated management of computers to facilitate timely software deployment and upgrades. [Y/N]
- j. Provide all student computers with standardized programs to create access consistency across Campuses. [Y/N]
- k. Maintain technology refresh cycles for hardware, software, and media. [C⁹]
- l. Implement a process for funding technology refresh cycles. [Y/N]
- m. Provide an Apple Macintosh computer lab on all Campuses. [Y/N]
- n. Implement procedures for technology-intensive programs like cyber security and biotech to obtain appropriate financial support. [Y/N]

⁷ Count of training offerings

⁸ Count of training offerings

⁹ Based on annual VCCS Workstation GAP Report

- o. Implement digital imaging in all administrative offices to reduce file storage and paper use, and improve workflow. [C]
- p. Ensure that multi-function networked printers and backups are available to all networked computers, and that the number of individual dedicated printers and fax machines are reduced by 75% of Academic Year 19 levels. [C]
- q. Provide emergency notifications and announcements in public areas on multiple devices on every floor of every building of the College. [Y/N]
- r. Provide emergency notifications and announcements on all networked computers in the College. [C¹⁰]
- s. Display emergency notifications on all College phones. [C¹¹]
- t. Provide a dedicated Emergency Operations Center (EOC) with current technology resources for use in the event of an incident to support continuity of operations (COOP). [Y/N]
- u. Provide appropriate training for College and Campus staff in the use and deployment of EOC and COOP equipment and procedures. [C¹²]
- v. Have at least 80% of faculty, staff, and students sign-up for NovaAlert. [C]
- w. Maintain at least 99% reliability for network, IT systems, cable television, and the College website. [C]
- x. Ensure 100% of all computers and servers are Energy Star compliant or meet recognized energy efficiency standards. [C]
- y. Maintain at least 80% of all College servers as virtual. [C]
- z. Maintain all critical servers in an established up to date secure commercial data Center. [Y/N]
- aa. Operate and regularly test a robust back-up disaster recovery site, backup equipment, and plans that allow access to College services with no more than a four-hour delay. [C¹³]
- bb. Maintain at least 80% satisfaction with IT services as [C]d by comprehensive annual customer surveys. [S]

VI. The College will take advantage of enhanced opportunities for virtual communication and collaboration among faculty, staff, and students.

The College will . . .

- a. Provide all faculty with access to a common set of tools for virtual office hours. [Y/N]
- b. Provide a variety of up to date communication methods for reaching students. [Y/N]
- c. Provide an up to date and robust interactive voice system for accessing information. [Y/N]
- d. Double the number of offices using live online computer chat for customer support compared to Academic Year 19 levels. [C]
- e. Maintain active College sites on multiple popular social networking and content sharing sites. [Y/N]
- f. Increase the use of on-line and video meetings by 200% compared to Academic Year 19 levels. [C]
- g. Maintain a robust intranet separate from the public facing website. [Y/N]

¹⁰ Based on alert test data

¹¹ Based on alert test data

¹² Based on IT Staff attendance data at training

¹³ Based on Test data

VII. The College will implement an Integrated Planning and Advising System for Students (IPASS) College-wide.

The College will . . .

- a. Provide students with access to an intuitive degree audit tool. [Y/N]
- b. Provide every student and advisor access to a comprehensive iPASS system. [Y/N]
- c. Utilize an early alert system based on multiple data points across time integrated with the iPASS system. [Y/N] and [C¹⁴]
- d. Provide virtual academic advising throughout the semester. [Y/N]
- e. Provide a virtual student services Center for convenient remote access to services. [Y/N]

VIII. The College will be recognized as a national leader and innovator in the use of technology.

The College will . . .

- a. Provide all full-time and adjunct faculty on every Campus with access to in-person instructional technology assistance. [Y/N]
- b. Provide faculty with support for universal design to meet students' diverse needs for accessibility to instruction and services. [Y/N]
- c. Annually fund a number of proposals from faculty and staff for demonstration projects deploying innovative uses of technology scalable to the College. [Y/N¹⁵]
- d. Annually fund a number of proposals from faculty and staff dedicated to experimenting with emerging technologies [Y/N¹⁶]
- e. Offer the top 20 highest enrollment degrees fully online. [Y/N]
- f. Increase the number of classroom and online courses fully using Open Educational Resources as listed in the fall schedule by 100% over Spring 2019. [C]
- g. Offer the top 5 highest enrollment degrees fully through Open Educational Resources both online and through classroom courses. [Y/N]
- h. Provide at least one section using lower cost (as defined by the VCCS) or OER materials for 50% of all courses with multiple sections. [C]
- i. Provide faculty with strategies so that all students will have their required course materials on the first day of class (other than lower cost or OER). [Y/N] and [C¹⁷]
- j. Require faculty keep all assignment grades online and accessible to students. [C¹⁸]
- k. Allow IT staff to provide remote support to all NVCC network connected computers. [Y/N]
- l. Provide technology support through the IT Help Desk 24/7/365. [Y/N]
- m. Maintain a comprehensive call Center and resolve 70% of inquiries on first call. [C]
- n. Provide access to virtual or remote desktops that allow thin clients on Campus to access all College systems and that allow remote access to advanced and specialized software. [Y/N]
- o. Maintain and utilize a comprehensive data governance model [Y/N]

¹⁴ Count of early alert messages

¹⁵ Plus number funded

¹⁶ Plus number funded

¹⁷ Based on number using a strategy for students to have materials on first day of class

¹⁸ Based on Grades in LMS

- p. Provide technology discount programs to help students afford their own devices. [Y/N]
- q. Provide an average of at least 2 public multi-port charging stations on each floor of every building on all Campuses and Centers. [C]
- r. Provide short-term loan computers or similar technology for use on-Campus by students at every Campus. [Y/N]
- s. Provide open computer labs with evening and weekend hours to insure all students have access. [Y/N]
- t. Increase the number of 3-d printers by at least 100% over Academic Year19 levels, and be sure there is one at every Campus and Center. [C]
- u. Utilize College-wide and Campus technology committees representing a broad cross-section of stakeholders to develop annual technology plans and to select technology that meets user needs. [Y/N]
- v. Include on-going maintenance and replacement costs in its technology purchase procedures and budgets. [Y/N]
- w. Produce a report at least every 5 years reviewing the technology in the region's public schools, universities where NOVA students transfer, and national trends to guide College technology planning. [Y/N]
- x. Meet or exceed all VCCS IT standards. [Y/N¹⁹]
- y. Meet all required VCCS and Virginia technology and IT Security Standards. [Y/N²⁰]
- z. Meet or exceed VCCS accessibility Standards. [Y/N²¹]
- aa. Maintain national ranking as one of the top technology-able community Colleges. [Y/N²²]
- bb. Provide the means for rapid resolution or support for the most frequent IT-problems through self-service or dedicated support numbers as reported by the IT Help Desk. [Y/N]
- cc. Establish a college-wide standard for IT support staffing. [Y/N] and [C]
- dd. Utilize a content management system to make updating the web easier. [Y/N]
- ee. Utilize the College's online Course Evaluation System in at least 75% of all sections. [C]
- ff. Deploy a standard electronic information kiosk. [Y/N]
- gg. Have a standard for electronic room information signs. [Y/N]
- hh. Have a standard for electronic building directories. [Y/N]
- ii. Provide a web-based room reservation system for conference and other occasional use facilities. [Y/N] and [C²³]
- jj. Provide an electronic system for classroom scheduling. [Y/N]
- kk. Maintain a robust system for class schedule analysis. [Y/N]
- ll. Provide a Business Intelligence System with self-service reporting and predictive analytics. [Y/N]
- mm. Have a plan and timetable for providing emergency alerts to campus areas outside of buildings. [Y/N]
- nn. Have a plan and timetable for passive emergency alerting within classrooms and campus buildings. [Y/N]

¹⁹ Based on annual VCCS Gap Report

²⁰ Based on annual VCCS Gap Report

²¹ Also use scan or other objective data where possible

²² Based on annual national ranking survey(s)

²³ Based on count of uses

oo. Establish workflows and business process to insure timely updating and integration of data across systems. [Y/N]

IX. The College will provide remote work capability for all College employees that includes access to appropriate College resources including College software applications, secure web storage, document imaging, voice-over-IP communications, video conferencing, and online collaboration tools.

The College will . . .

- a. Provide remote work capability for all College employees that includes access to appropriate College resources including College software applications, secure remote storage, document imaging, voice-over-IP communications, video conferencing, and online collaboration tools. [Y/N]
- b. Provide audio and computer remote access in at least 80% of all conference rooms at each Campus and Center. [C]
- c. Provide audio and computer remote access for every College-wide meeting. [Y/N²⁴] and [S]
- d. Provide training in remote access and make use of tools for remote access part of the College technology training requirement. [Y/N]
- e. Provide remotely accessible secure document storage for faculty, staff and students. [Y/N]
- f. Maintain policy that requires all faculty and staff save information to secure virtual drives on a College server. [Y/N]

X. The College will utilize technology to make robust access to information easier from any location.

The College will . . .

- a. Provide an active and robust virtual presence for all College services on both the public College website and intranet. [Y/N]
- b. Utilize a responsive website that accommodates mobile devices. [Y/N]
- c. Maintain a robust intranet separate from the public facing website. [Y/N]
- d. Double the number of offices using live online computer chat for customer support of Academic Year 19 levels. [C]
- e. Increase services delivered through dedicated mobile apps by 100% over Academic Year 19 levels. [C]
- f. Increase information delivered through voice technology by 200% over Academic Year 19 levels. [C]
- g. Survey users at least every two years on usability and satisfaction with the College website. [S]
- h. Establish a process for insuring information on the College website and through the search engine is up to date. (Y/N]

²⁴ Based on having a policy in place

XI. The College will use technology to provide elements of NOVA student life experience available online.

The College will . . .

- a. Provide at least a dozen virtual options for student life and co-curricular activities. [C]
- b. Provide opportunities for students to interact socially with other NOVA students through online communities. [Y/N]
- c. Provide robust student organization management and communication software. [Y/N]

XII. The College will have collaborative relationships with other partners to expand the availability of resources and expertise.

The College will . . .

- a. Participate in at least 80% of the shared enterprise technology purchases as reported by the VCCS. [C]
- b. Participate at least annually with GMU IT Leadership and staff to review the student technology experience and expectations, and to identify potential areas for coordination. [Y/N]
- c. Continue to make at least 80% of NOVA Online's courses available to other VCCS Colleges through the Shared Services Distance Learning Program and have students from at least 60% of the Colleges in the system. [Y/N] and [C]