FACTBOOK: Technology at Minot State University

Information Technology (IT) is a strategic necessity for Minot State University. Fundamental tools including e-mail, calendaring, file sharing, telephone, and Web access are important for administrative, academic, and research functions, and basic day-to-day operations. High-speed networking and performance computing, collaborative voice, video, and data tools, and other advanced technology services create innovative opportunities for the institution.

Reliable and redundant network infrastructure is the backbone on which all other services depend.   IT infrastructure refers to the entire technology architecture that supports student, faculty, staff, and administrative computing activities on campus and from a distance. Components that make up the current technology architecture include, but are not limited to, switched and routed network backbone, wireless Internet access, and production support servers and appliances (file and print, backup, web, network support, directory services, CCTV cameras, firewall, filtering/bandwidth management, intrusion detection, patch management, antivirus gateway, remote access control, rapid application deployment, network/application resource monitoring, and secure network access).

The network infrastructure is the key component to support expanding technological developments across campus. The wired network needs to be reliable, robust, and secure transport system to meet the needs of the campus community and support access to the latest voice, data, and video technologies. Today, all edge switches support transfer rates up to 1 Gigabyte per second (1000 Mbps) from the core to the desktop and 10 Gigabytes per second on the campus backbone. A centralized data center with optimized environmental controls and expansion capability to house and support campus fiber connectivity an air-blown, single-mode fiber network infrastructure.

Infrastructure binds information technology systems together and allows systems to communicate with each other over a network. MSU participates in StageNET, the state-funded wide area network (WAN) consortium. StageNET offers reliable, cost-effective network services, enables convergence of voice, data, and video, and provides linkage through Internet2 and the Northern Tier Network to national and international research and development networks. Recent StageNET upgrades increase the state backbone to a 10 gigabit/second Ethernet ring with redundant failover links located in Fargo, Grand Forks, Minot, and Bismarck.

A critical component of the current and future technology infrastructure is security. In the past, access to computing and network resources was maintained in a relatively controlled environment with minimal remote or online access. Extensive availability to information over the network/Internet and via Web-based applications has increased the risk of unauthorized access and/or inappropriate use of information. Data security measures have been implemented, especially with regard to systems containing large amounts of personal information. Users are required to pass additional verification to access sensitive areas with Two-factor authentication.

A single user id and password is used on all major systems for all faculty, staff, and students. User authentication is required to access campus online resources including Campus Connection, wireless, Office 365, etc. The campus ID card system is designed to simplify access to services, events, and secure locations throughout campus. Security cameras are strategically located in campus buildings and selected outside areas (parking lots, etc.) to maximize visual security for all campus constituents. Other

security and data protection initiatives in place relate to regular patching of critical systems, robust antivirus, and reliable archives (real-time on and offsite storage, disk-to-disk) of critical data in the event of hardware or application failure. The Assurance emergency notification system ensures timely notifications to all faculty, staff, and students in the event of a campus, local, or regional emergency. Blue lights, campus-wide speaker system, and "panic" buttons are in place for emergency and informational needs.

Information technology is an important component of the instructional and learning experience and is integral to research, teaching, and learning. MSU supports computers in numerous general access, specialized training, and teaching labs on campus and at the Minot Air Force Base Education Center. Software for campus labs is distributed and maintained from a common set of software images providing timely distribution, rapid install application packages, and critical Windows and antivirus signature file updates. Internet capable learning spaces and kiosks are strategically located across campus to "informally" engage students in learning opportunities. Computer systems equipped with assistive technologies including large monitors, monitor lifts, etc., are made available in open-access computer labs for persons with disabilities or special needs. Email is required for all students to receive official campus communications regarding Add/Drop Deadlines, Registration Information, Financial Aid, Campus Events, Emergency Notices, and more. Additional functionality with Office 365 for students is online space for file storage, file sharing, collaboration, and access to a free download of Office 365 ProPlus (MS Word, Excel, PowerPoint, etc.), a Microsoft workforce readiness initiative. Collaborative spaces are available to allow students to work on projects as a group.

Students attending Minot State University join a community of people devoted to creating and sharing information—activities that can be enhanced by information technology. Whether a full- or part-time student, living on campus or commuting, technology is available that allows for communication, personal development, and getting together (in person and virtually). BlackBoard Learn is the campus course management system supporting fully online courses as well as "blended courses" in which faculty enhance their face-to-face classes with interactive online learning experiences. Multiple programs are currently available totally online. Online orientation and full library services are available to all students. Blackboard supports deployable hosted and 3rd party building blocks for added functionality including Blackboard Collaborate, YuJa lecture capture, Mobile Web, Cloud Services, Respondus lock down browser for secure testing, SafeAssign, and other product integrations. Blackboard Learn empowers instructors to engage every learner by motivating them on the personal devices they rely on. Several "flex" classrooms have been configured to support both face-to-face students and distance students in a synchronous hybrid environment. Students in the classroom and online are able to see, hear, and interact with each other and the instructor.

Collaborative teaching tools provide interactive and engaged teaching and learning environment for faculty and students. Microsoft Teams and SharePoint creates a single access point for faculty and students to engage in document sharing and team-based learning. Other Web-based collaboration tools are available to students and faculty including blogs, wikis, and other social media sites. Maple T.A. complements the online course management system by providing Web-based testing and assessment for mathematics, science, or any course that requires mathematics.

A majority of the classrooms on campus are equipped with permanently installed video projection systems and other technology enhancements. Incorporating smartphones and iPads/tablets have increased the level of collaboration for students and faculty in the classroom. Classroom technology, whether permanently installed or delivered on demand, is available in all academic buildings. Six classroom locations have high definition videoconferencing capability. A full-time IVN coordinator

provides the scheduling and daily support for all video-enabled classrooms. Videoconferencing software is available for both PCs and Macs to allow users to join a traditional IVN class in session from their home or office or collaborate via "Meet Me", bridging the "on site" requirement gap. Through an NDUS sponsored initiative, a lecture capture system is now available in each IVN classroom. YuJa lecture capture makes class time available all the time for students by automatically capturing, storing and indexing every class session for replay to be accessed online at a later time via laptop, iPad, tablet, or a variety of other mobile devices.

Centralized IT staff provides support for a broad range of technology-enhanced services for faculty, staff, and students. Increased availability of and access to computing resources requires equally robust support services that make it easier for all students to succeed. MSU recognizes the strong connection between the quality of education and the quality of technology services available to students. IT Central (ITC) is a centrally located service organization comprised of a director of desktop services, director of network services, network operations manager, mac/classroom specialist, security control officer, helpdesk coordinator, wiring technician, and Web designer/developer. In addition to working in a specific area of specialization, all technicians provide desktop support and actively test and evaluate new server- and network-based technologies to achieve increased flexibility and improve system responsiveness.

The Help Desk is a significant component of ITC. Requests may be submitted online at https://www.minotstateu.edu/helpdesk or by emailing helpdesk@minotstateu.edu. The office in Old Main 108 is open Monday-Friday from 7:30am-4:30pm and is the University's first line of support relative to computer software and hardware issues, the use of instructional technology, access to server support services, and resolution of network-related problems. Help Desk services for students include hardware and software installation, equipment checkout (laptop, desktop, camera, projector, microphone, etc.), removal of spyware and computer viruses, file storage, Web space, and software downloads, available free to all students. Wired and wireless Internet access is available in the residence halls and across campus free of charge. There are over 1200 active data ports and 250+ wireless access points.

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