Technology Used in Instruction at UNCG (Summary) – updated 9/3/14
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UNCG faculty and students have access to and support for a broad array of software and equipment to enhance classroom and online instruction and learning. A brief summary and some examples of use follows.

Available Technology

Type	Description
Wired Network	UNCG's robust campus network, with high-speed connections to other institutions through the *North Carolina Research & Education Network* and *Internet2*, permits activities not possible through typical commercial Internet connections (e.g., use of the advance videoconferencing software LOLA).
Wireless Network	Complete wireless coverage in all academic buildings permits use of laptops and other devices in the classroom for hands-on learning and real-time assessment.
Classroom Technology	UNCG's 250+ classrooms include computers at the instructor's station, a room display system (typically projector + screen), and a control panel that includes a two-way intercom for assistance. Some classrooms are equipped with additional technologies such as document cameras and SMARTBoards.
Computer Labs	ITS manages 13 campus-wide computing labs (including 2 training labs), and several academic departments manage their own labs. Labs may include specialized equipment such as the large-format plotter in Interior Architecture's Digital Design Studio and MIDI electronic keyboards in the Music lab. The new ITS-managed Graham 313 lab, which opened in Fall 2013, supports the Math Emporium and provides interactive whiteboards, videoconferencing equipment, & a classroom response system ('clickers').
Library-provided Technology	Beyond providing technology access within Library facilities, University Libraries offers equipment checkout services (e.g., laptops, iPads, camcorders, voice recorders, & audio equipment), assists faculty & students with the use of online information resources (e.g., eReserves, online applications & databases), and provides assistance with media projects (Digital Media Commons).
Classroom Response Systems	'Clicker' devices, purchased through UNCG's bookstore, allow faculty to perform real-time assessments of student learning, & to better engage students in classroom activities.
"iSpartan" Email, Messaging, & Other Collaboration Tools	"iSpartan," UNCG's implementation of Google Apps for Education, includes a collection of web-based collaboration tools, including email, chat, calendaring, website creation/hosting, videoconferencing, document creation and storage, plus access to additional popular online services such as YouTube & Blogger. The Box cloud-based file storage solution provides online file-sharing & collaboration capabilities.
Learning Management Systems (LMSs)	An LMS allows instructors to deliver learning content to students (syllabi, lecture notes, etc.), and provides collaborative and interactive opportunities for students (e.g., discussion boards). Following the completion of the LMS product study in spring 2014, UNCG is transitioning from Blackboard Learn to Canvas as UNCG's primary LMS.
Videoconferencing – through "virtual" classrooms & meeting spaces	These tools are used to bring remote guests or students into on-campus classes, to hold classes entirely online, to provide online office hours & tutoring sessions, and for in-class "breakout" sessions and small-group work by students. Solutions such as Google+ Hangouts (through iSpartan) & Blackboard Collaborate offer the flexibility of use from any adequately connected location and device, including mobile devices. Advanced solutions such as LOLA are used when standard solutions do not meet client needs.
Videoconferencing – through "room-based" systems	Room-based systems (e.g., PolyComm, Lifesize) provide less ubiquitous access, but offer high-quality video and audio design. In some cases, a room operator provides live monitoring and assistance. UNCG room-based systems include the ITS-managed TeleLearning Center in Stone, and department/unit managed rooms in the Lloyd International Honors College, JSNN, HHS (e.g., Stone & HHP buildings, CPS program equipment in Guilford Residence Hall), the Office of Research & Economic

	Development, and a new ITS-managed facility in Bryan 114 (opening Dec 2014). Bryan 114, being developed in collaboration with the Bryan School of Business & Economics, will offer enhanced features such as automatic camera tracking of speakers and the potential for lecture recording.
Web-delivered Content and Applications	Beyond Blackboard and iSpartan, UNCG offers a variety of solutions for developing, publishing and maintaining websites and web content for instruction. Examples include interactive web applications, streaming audio & video and other multi-media solutions (e.g., Flash media server), web-based surveys, and web platforms on which developers create & run customized web software. Social media resources include UNCG's YouTube channel, iTunes@UNCG (for podcasting), & tools such as Twitter. Non-university websites used by classes include agency and professional organization websites, online GIS applications, and Federal Government websites (e.g., US Census).
Specialized Computing Platforms/ Servers	For classes with advanced computational & other specialized needs, ITS offers an Instructional Linux Environment (ILE), as well as access to & support for high performance computing through the Henry 2 Linux cluster housed at NC State. Some departments run their own servers to meet specialized instructional needs.
Other Specialized Equipment & Software	UNCG's academic programs make extensive use of specialized equipment and software to meet their curricular-specific needs. Just a few of these examples include highly sophisticated microscopy instrumentation (JSNN & Chemistry), cartographic plotters & GPS equipment (Geography), simulation equipment & medical devices (Nursing), and lighting & sound equipment (Theater).

Just a few examples of how technology is used for instruction at UNCG include:

- In ITS computing labs, students taking *Writing in the Professions* (English) make in-class presentations using tools such as PowerPoint, Prezi & videos. The class records their evaluations through immediate, electronic submissions to an open forum that allows for discussion and group assessment.
- Many Geography classes are conducted entirely in the department's computing labs, providing extensive hands-on training and experience on a wide-range of GIS, cartography, remote sensing, & other specialized technologies.
- Sociology classes use Blackboard Learn collaborative functions such as blogs and discussion forums for in-depth discussion of topics beyond the limited time available in the classroom. This provides students with more exposure to varying points of view, as well as more opportunities to refine and better articulate their own opinions.
- The Conflict & Peace Studies program uses Blackboard Collaborate to teach 'hybrid' classes in which some students are located physically in a classroom, while others join remotely. This allows the program to deliver the same instruction to students in multiple locations, and increases enrollment in course sections.
- Students in French classes improve language skills and gain deeper cultural understanding through language practice with students in France, enabled by videoconferencing software and lab computers with webcams & headphones.
- The online course *ECON 201: Principle of Microeconomics* is taught using an award-winning online game developed by UNCG's Division of Continual Learning and hosted in UNCG's Windows web server environment.
- Information Systems & Supply Chain Management online MS program students engage in web development (e.g., PhP scripting) and database administration work (with MySQL) within a UNCG-hosted web environment.
- Hospitality & Restaurant Management students explore numerous federal government agency websites and access online training materials (e.g., EEOC, Homeland Security, Department of State) to check their intended responses to case studies against primary sources of legal code. Accounting students use online electronic financial and tax authorities (CCH IntelliConnect, RIA Checkpoint, etc.) to analyze cases and gather support for their conclusions.
- In *Biomechanics of Sport and Physical Activity* (Kinesiology), Twitter is used to engage students in learning outside the traditional classroom. When students see a biomechanical concept outside the classroom, they are asked to Tweet about how the activity they just witnessed in the real world relates to a concept taught in class.
- An undergraduate Music Education student conducted a research study on the viability of various web-conferencing technologies for use in teaching music across distances. Of the 3 technologies tested (Skype, Polycom, & LOLA), LOLA was the clear-cut best.