



Electronic Classroom Design and Upgrade Process

This document and the attached forms are designed to aid colleges and departments on the campus of Western Illinois University through the appropriate steps for requesting cost estimates and scheduling the upgrade of existing and design of new classrooms, conference rooms, and learning spaces.

The following learning environment analysis should be completed and submitted to University Technology (uTech) prior to acquisition of equipment and physical work in the learning space.

Information requested below should be collected as available and submitted to uTech (184 Malpass Library) prior to the scheduled initial assessment meeting.

Section 1

Current room information:

College/Department _____ Tech Rep _____
Phone number _____ Email _____
Building _____ Room # _____
Current capacity _____ Instructor's desk ___yes ___no Podium ___yes ___no

Upgrade request:

___ Upgrade existing electronic room ___ Build new room

Room type:

___ Conference room ___ Classroom ___ Lab ___ Other

Section 2

We are currently requesting:

Design and planning assistance:

___ A technologist or group of technologists to meet with us to discuss the electronic capabilities for a desired learning space.

Estimate:

___ An overall **cost estimate** to include instructional technology upgrades, infrastructure upgrades, and physical room design upgrades.

___ A **cost estimate** for upgrading instructional technology and infrastructure only.

___ Other, please describe:



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Section 3

Start building or upgrading the room:

- New design to include instructional technology, infrastructure, and physical design.
- Upgrade to include instructional technology, infrastructure, and physical design.
- Upgrade to include instructional technology and infrastructure.
- Upgrade to include instructional technology only.

Section 4

Survey of current room instructional technology:

	Yes	No	Model/WIU Asset Tag #
CODEC			
Cameras			
Switcher			
Projector(s)			
Mounts(s)			
Screen			
Whiteboard			
SMART Board			
Document Camera			
DVD Player			
VCR			
Speakers			
Amplifier			
Computer			
Monitor			
Receiver			
Touch Panel			

Additional comments:



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Section 5

Statement of anticipated instructional technology improvements:

Please provide an overview of anticipated improvements to the technology mentioned above. In this overview, it would be helpful to discuss current and projected needs of the instructional activities that take place in the room.

Section 6

As indicated in the July 2007 Strategic Plan Update, and as established in the Institutional Strategic Plan for Technology at Western Illinois University, the University has committed to bringing all general instructional classrooms up to minimum technology standards, defined by the President's Technology Advisory Users Group ... "Minimum technological standards for the general instructional classrooms include Ethernet connectivity, computer, mounted projector, document camera, VCR/DVD player, audio system with wall-mounted speakers, and telephone."

Projector

The video projector is the most visible component of the electronic classroom. If it is not up to standards or reliable, the room will not be up to standards or reliable either. Care should be taken in its selection and installation.

Sharp LCD or DLP projector with a minimum of 3500 ANSI lumen brightness (such as XG-C335X or XG-C435X). Projector should be equipped with a minimum of 2 VGA inputs, 1 DVI input, 1 Ethernet RJ-45 interface, and 1 RS-232 control port.

Document camera

The document camera is one of the more versatile components of the electronic classroom. It provides a flexible presentation medium at a low cost.

Elmo TT02 is our preferred device as of January 2009. It has a small footprint on the desk, and outputs a high definition signal for best clarity. There are a variety of document cameras on the market, and many have additional functions that may or may not be needed.



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Switcher

One of the “unseen” components in the electronic classroom, the switcher allows the user to select from a number of different presentation inputs. This component must be integrated into the entire classroom system to provide maximum flexibility and reliability.

Extron MLS406SA is our preferred system switcher as of January 2009. It has 3 video/s-video inputs, 3 VGA inputs, an 18 watt amp, and a mixed microphone input for sound re-enforcement. It also has variable and fixed pre-amp audio outs for use in venues larger than the 18 watt amp can handle. Also included is an RS-232 control interface for integration into a room control system. uTech strongly recommends the Extron line of products due to an ironclad reputation within the industry, and personal experience on campus.

VCR/DVD player

A common input or presentation component. Fairly inexpensive.

Nearly any will do, as long as they have a combined video/audio output for the device. We currently use a JVC HR-XVC11, but nearly any combo player will perform adequately. At this time, advanced features such as digital audio out and video up-scaling to an HDMI port are not needed, and cannot be used.

Presentation computer

The presentation computer is perhaps the most versatile component.

This is the area that allows the most flexibility in equipment choice. There are a few specific features that make integration into a classroom environment much easier. The first is an "all in one" design, with a VGA output that can be mirrored. This is important as it keeps the computer on the desktop, and does not dump large amounts of heat into the cabinet. It also allows for a desktop monitor and a projector video feed without the need for additional equipment. uTech does not recommend dual output video cards, as video content may not be displayed properly. uTech is currently using the 20" Apple iMac for classroom computers. The Intel architecture allows the instructor to choose the operating system they are most comfortable with, and meets all the necessary design requirements.

Room control system

This is the heart of an electronic classroom as it enables the user to discard the hand-held remote controls. To provide quality audio a pair of TOA BS-1030W speakers is required. It also allows a high degree of both reliability and uniformity in a wide range of instructional settings and classrooms.

This is the most important element of a modern Electronic Classroom at Western Illinois University. We currently use the AMX brand of control system, including touch panels, and the central control masters. This system is like that of a powerful universal remote control. Instead of having to hunt for different



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buttons on different remotes, the AMX system provides the ability to perform complex tasks, such as powering on the room for use or selecting the computer, laptop, or document camera with a single push of a button. In addition, the AMX system also indicates if a filter needs to be changed or if the projector bulb is ready to expire. This allows us to be much more pro-active in the maintenance of our classrooms. The AMX system keeps track of the usage of each device in the classroom. In the future, this system may also be configured to provide a button to allow the instructor to call for help quickly. There are a variety of components suitable for every classroom need, from large 17" touch panels down to more discrete 7" panels. Our standard system consists of an NI3100 master, and a 10"-12" panel. Multiple panels can be installed in multi-purpose rooms, or large classrooms to make the use of the room more convenient.

Various cabling and installation materials

Integrating the various components requires a myriad of cables and connectors. It is absolutely critical that the appropriate cable and connector are used for each input device and classroom. This is crucial not only to ensure reliable operation, but also to meet building and safety codes.

The uTech Classroom Services stocks bulk plenum rated cable, as well as the necessary hardware to install and terminate this cable properly. This cable, along with installation, can be provided on a charge back basis. We will also work closely with 3rd party integration companies, should the project call for it. **(uTech will evaluate video cabling needs as special cables are often required.)**

Telephone

The minimum standard is a SciTec configured as a WIU courtesy phone.

Ethernet connectivity

An Ethernet LAN connection is required at the instructor's desk/podium.

(uTech will evaluate existing or new LAN wiring. A new LAN wire may be required in accordance with WIU LAN Standards.)



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Section 7

Survey of Current Room Infrastructure:

	Yes	No	# Available	# Active	Comments
Ethernet Connectivity/Data Ports (LAN)					
Speaker/Audio Cables					
Electrical Outlets					
Circuitry load analysis for room					
Telephone / Communication Ports					
Wireless Connectivity					
Equipment Wiring					
Aux. Input					

Please provide an overview of anticipated improvements to the infrastructure mentioned above. In this overview, it would be helpful to discuss current and projected needs of the instructional activities that take place in the room. Make note of any future anticipation to use the current room for podcasting, distance education (CODEC) courses, etc.



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Section 8

Suggested Improvements to Current Room Design:

	Yes	No	Comments
Lighting			
Painting			
Carpeting			
Seating			
Instructor's Area			
Sound Proofing			

Please provide an overview of anticipated improvements to physical room design. In this overview, it would be helpful to discuss current and projected needs of the instructional activities that take place in the room.

Upon receipt of this information, the requestor will be contacted by a representative of uTech to set up the first in a series of meetings to discuss the upgrade and/or design plans for the room.



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Section 9

Cost Estimate Summary:

This page is to be completed after the room design and technology surveys, and the classroom walkthrough area has taken place.

Cost estimates will be determined after College, Physical Plant, Telecommunications, and uTech have met.

1 Physical Plant labor and materials:						
Lighting-electrical-video/data cable					\$ _____	
Painting					\$ _____	
Carpeting					\$ _____	
Instructor's area					\$ _____	
Sound Proofing					\$ _____	
Other expenses					\$ _____	
Subtotal Physical Plant						\$ _____
2 Telecommunications:						
Phone installation					\$ _____	
Recurring monthly charges					\$ _____	
Other expenses					\$ _____	
Subtotal Telecommunications						\$ _____
3 uTech:						
Data port-material fee					\$ _____	
Infrastructure equipment					\$ _____	
Other expenses					\$ _____	
Subtotal uTech						\$ _____
College						
4 Furniture						
Furniture					\$ _____	
Electronic Classroom Equipment					\$ _____	
Other expenses					\$ _____	
Subtotal College						\$ _____
Provost Office						
5 Furniture						
Furniture					\$ _____	
Seating					\$ _____	
Other expenses					\$ _____	
Subtotal Provost Office						\$ _____
Total estimate cost of electronic classroom:						\$ _____
These estimates are valid for 60 days.						



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Section 10

Project Contacts and Budget Information:

College Contact: _____

uTech Contact: _____

Physical Plant Contact: _____

Purchasing Contact: _____

Provost Office Contact: _____

Budget Number(s) for this project:

Area:	Account #:	\$:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Work Order # (s):

Physical Plant Sprocket/Service Request: _____

uTech ticket #: _____

Section 11

Summary list:

Areas requesting to start building or upgrading a specific room should be certain that they have completed the following prior to starting the project:

- Survey of current room information technology, infrastructure for technology, and physical/room design improvements (previous sections)
- Met with representatives from uTech and Physical Plant to finalize plans for the room
- Ordered and received all necessary equipment and materials for the project
- Completed all necessary work orders/ticket submissions for the project
- Completed all necessary paperwork for provost/registrar
- Complete the on-line form "Classroom Purpose Change" at <http://www.wiu.edu/registrar/forms.php>
- Inform the appropriate Scheduling Office of potential work dates
- Determine where existing classes and events will be relocated

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Section 12

Listing of Exemplary Electronic Classrooms:

Building/Room	College
➤ QC 102C	Quad Cities
➤ QC 113	Quad Cities
➤ Sallee 226	Fine Arts and Communication
➤ Sallee 228	Fine Arts and Communication
➤ Horrabin 26	Education and Human Services
➤ Horrabin 44	Education and Human Services
➤ Horrabin 7	Education and Human Services
➤ Thompson 210	UHDS
➤ Sallee 101	Fine Arts and Communication
➤ Waggoner 171	Arts and Sciences
➤ Stipes 120	Business and Technology
➤ Brophy 227	Education and Human Services
➤ Morgan 109	Arts and Sciences
➤ Morgan 101B	Arts and Sciences
➤ Currens 204	Education and Human Services

List will be updated as Electronic Classrooms are added.

Section 13

Classroom Pictures:



Touch Panel



Audio-Video Components

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Instructor's Monitor in a Polycom
Video Conference Installation



Computer Equipment and
Touch Panel in Sallee Hall 226



Instructor's Station in Sallee Hall 226



Instructor's Station in Sallee Hall 228



Waggoner Hall 171



View from back of classroom
in Waggoner Hall 171