

Designing an Active Learning Classroom for Local and Distant Students

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Genesis of Idea for Active Learning

- University of Minnesota video / Notre Dame
- 30 years experience with delivery of video lectures at UF
- World-class business faculty willing to innovate
- Physical space impact on virtual space
- Phil Donahue show



Inside Active Learning Classrooms

Information Technology Services / The University of Iowa

TILE Teaching Strategies

Overview Course Design Facilitating TILE Assessment

General TILE Questions

What is TILE? - Show/Hide

The TILE Spaces to Transform, Interact, Learn, Engage project will create new learning space structures that address a variety of teaching and learning needs on campus and help recruit and retain students. These new student centered spaces will support a variety of models for teaching and learning, including self-paced learning, active learning, increased student engagement, collaborative teamwork, and increased interaction with faculty. In addition to the physical and technology enhancements to these spaces, a key component of the project will be to provide technical support and course design assistance to faculty to use these spaces for active and engaged learning.

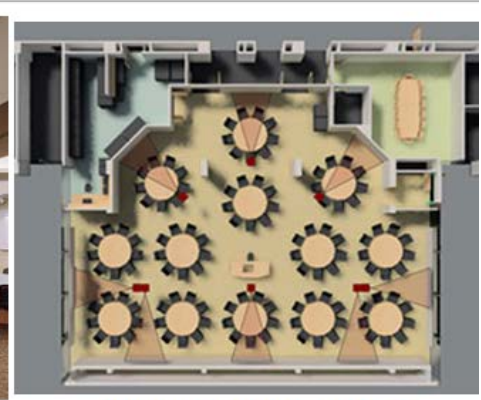
TILE Project goals:

- Create spaces that support teaching and learning models that lead to increased student recruitment and retention
- Make the most effective use of learning spaces available as student enrollment increases and new classroom construction is limited

Further reading:
[Trends in Learning Space Design](#)
 Brown, Malcolm and Philip Long. "Trends in Learning Space Design." *Learning Spaces*. Ed. Odinger, Dana G. EDUCAUSE, 2008.
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TEAL classroom supporting team engagement



TEAL classroom layout, top view

SCALE-UP

Student-Centered Active Learning Environment with Upside-down Pedagogies

How would you like to teach (or learn) in a classroom like this one at MIT?

The purpose of this website is to share designs for state-of-the-art learning studios, teaching methods, and instructional materials that are based on more than a decade of discipline-based education research.

For a quick introduction, visit our [Frequently Asked Questions](#) page, or take a look at this [5 minute video](#) or view a some of these short video clips created by adopters:

Minnesota, Iowa, Virginia Tech, Old Dominion, Windward High School

As a visitor to the site, you can view classroom designs and find contact information for scores of colleges and a growing number of high schools that are offering highly interactive, collaborative, guided-inquiry-based instruction.

Active Learning Classrooms (2012)

from Andy Underwood-Bultmann [P&MS](#)

Promoter from SARS 2 gene
 Capsicum annuum
 MCS
 Origin of replication

06:22

HD vimeo

UNIVERSITY OF MINNESOTA
 Driven to Discover™

Guiding Principles



- Increase access
- Influence teaching practices
- Use innovative and engaging instructional methods
- Improve teaching effectiveness
- Increase student knowledge retention

Seeking Funds

- UF technology fee
 - Round 1 – draft proposal
 - Round 2 – refined proposal
- Development office
 - Donor presentation
 - Faculty participation
 - Venue: Collaborative Room



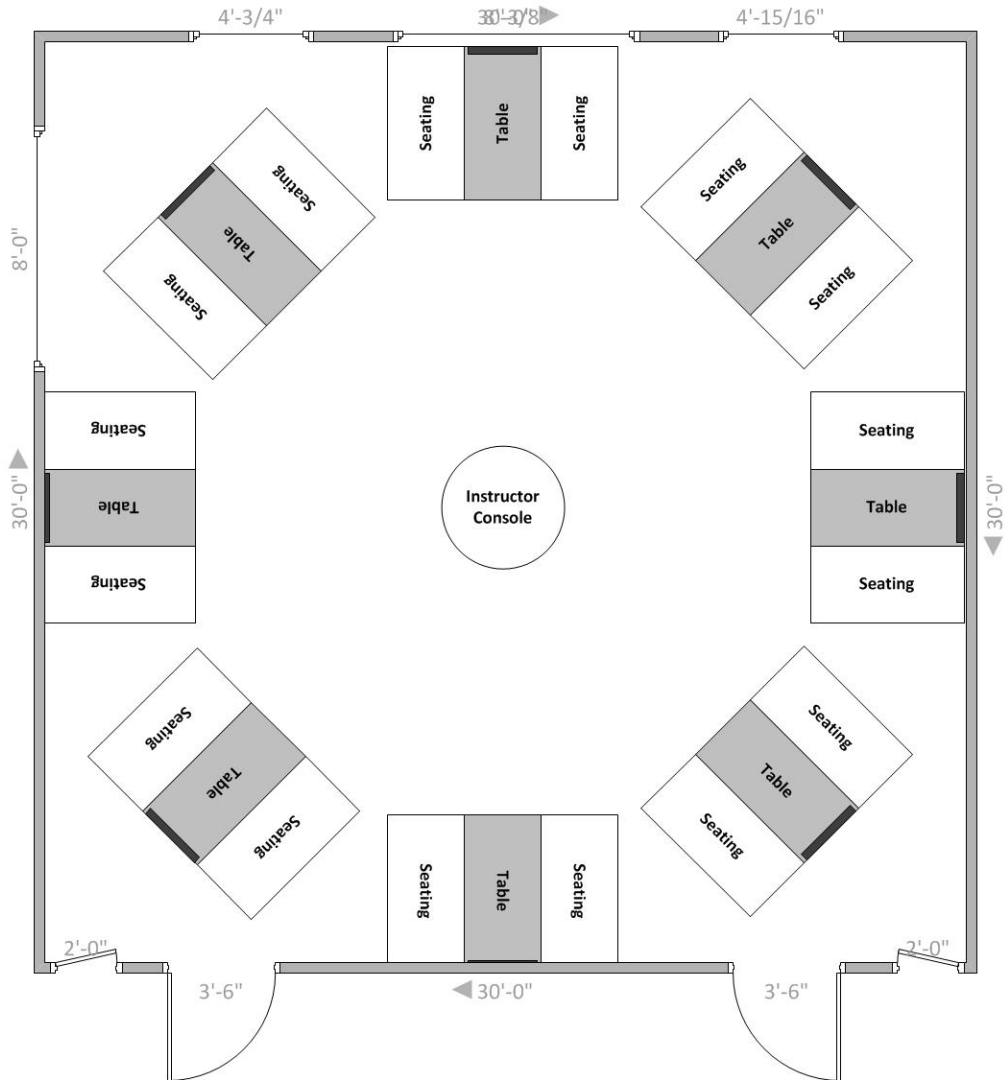
Conceptual Testing

- Experimenting with team size
 - SCALE-UP: 3 teams of 3
 - Team-based learning: 6-7 per team
- Practicing the pedagogy
 - Adding discussions
 - Moving around the room / changing the focus

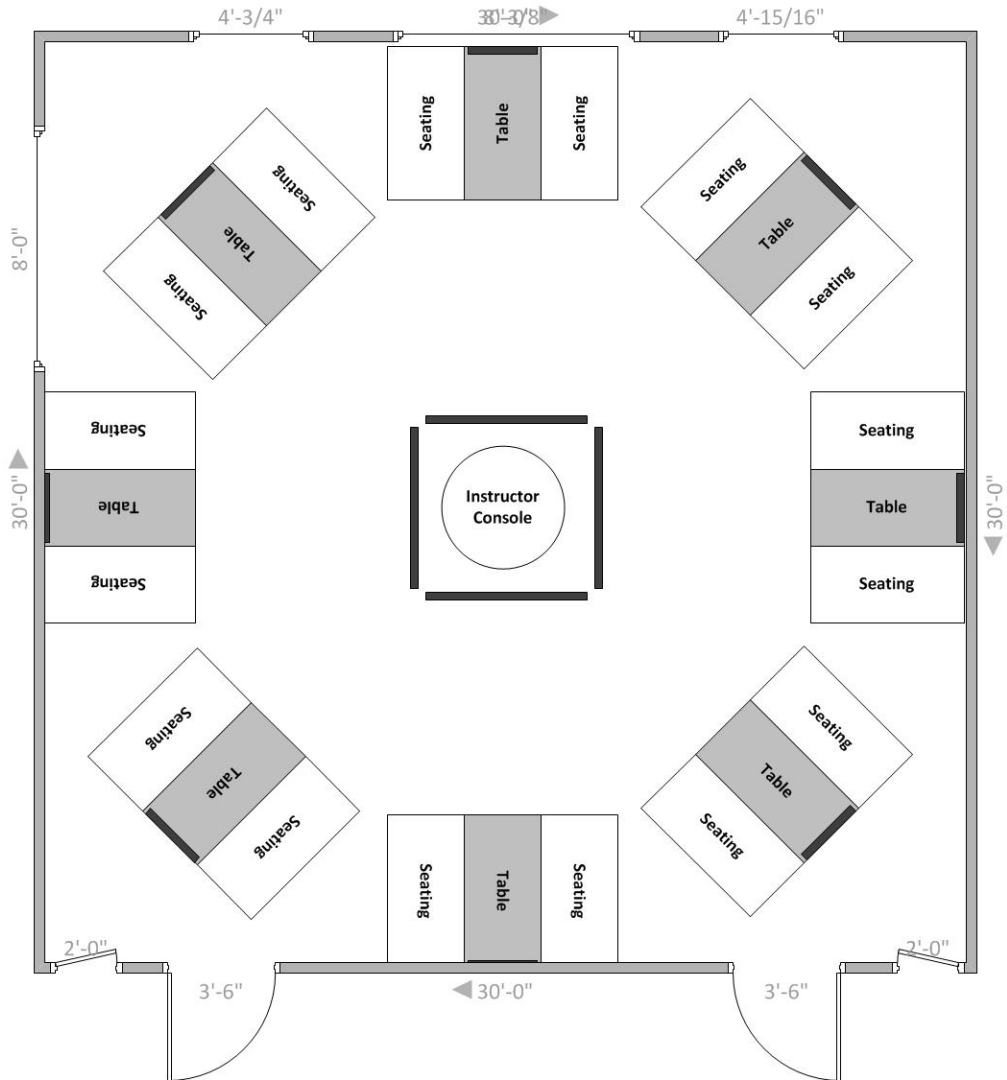
Brainstorm

- Requirement to retain capacity: 40 seats
- Moving the instructor console to center
- Allowing for instructor circulation
- Supporting various teaching activities
- No “cheap seats”
 - See anyone / anything
 - Projected images always large enough

Hub & Spoke

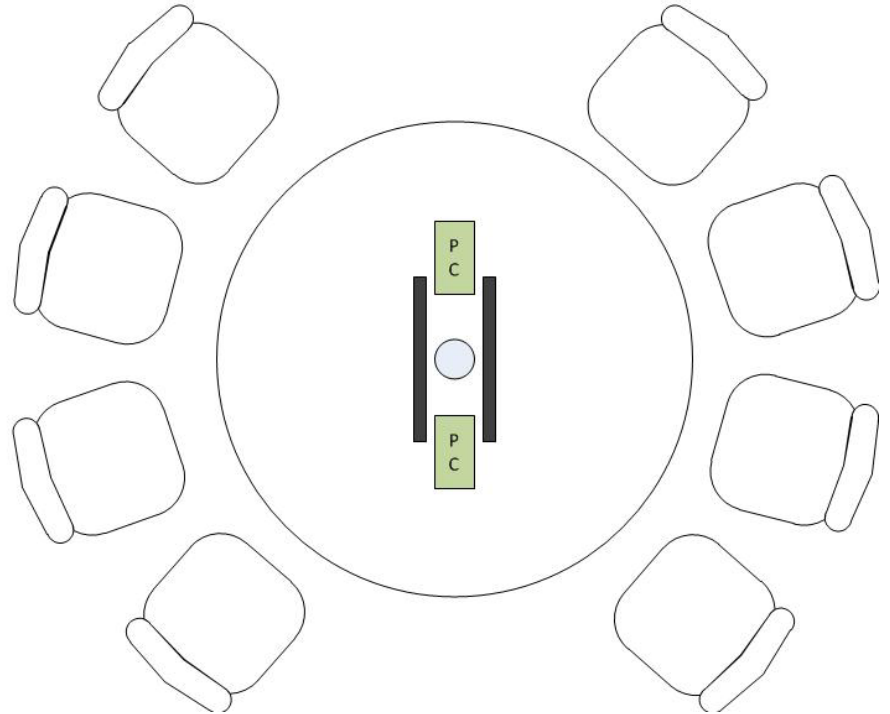


Dallas Cowboy Stadium



Round Tables!

- 2 groups/table
- 4 students/group in room
- Shared monitor for each group



Prototype

Local students:

- Half of 7' round table
- PC
- 27" monitor with integrated webcam
- Speakers

Distant students:

- Laptops
- iPads

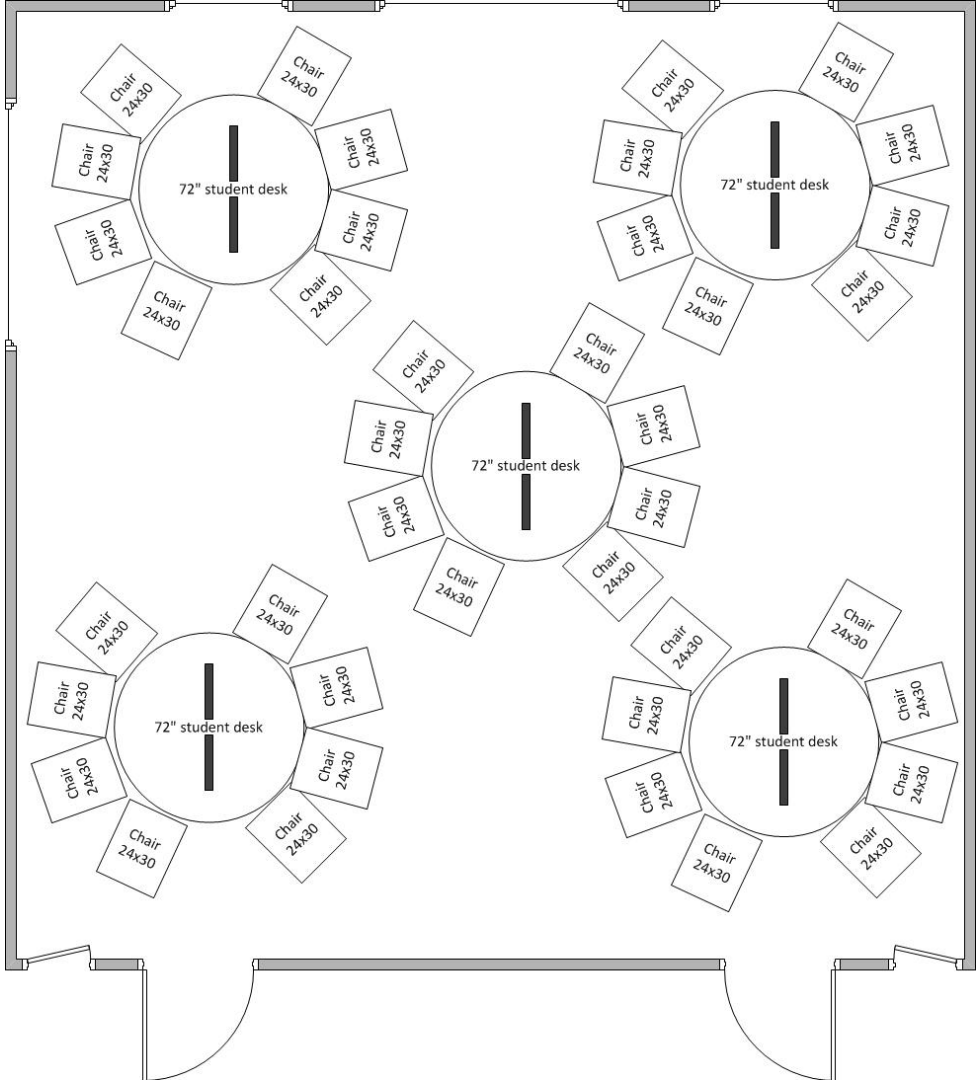
Instructor:

- PC & Monitor
- Wireless Document Camera

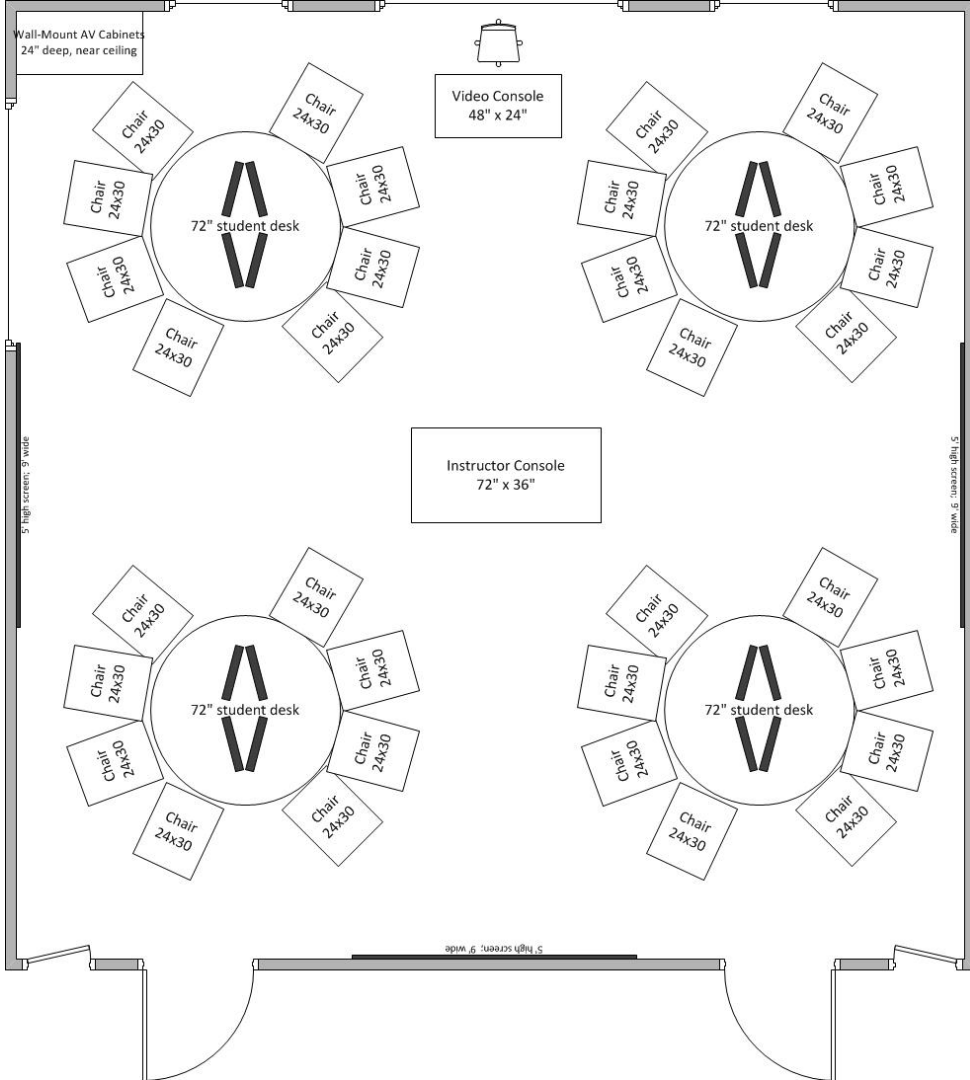
Host:

- Cameras and Mics
- PC
 - Capture Hardware
 - Adobe Connect

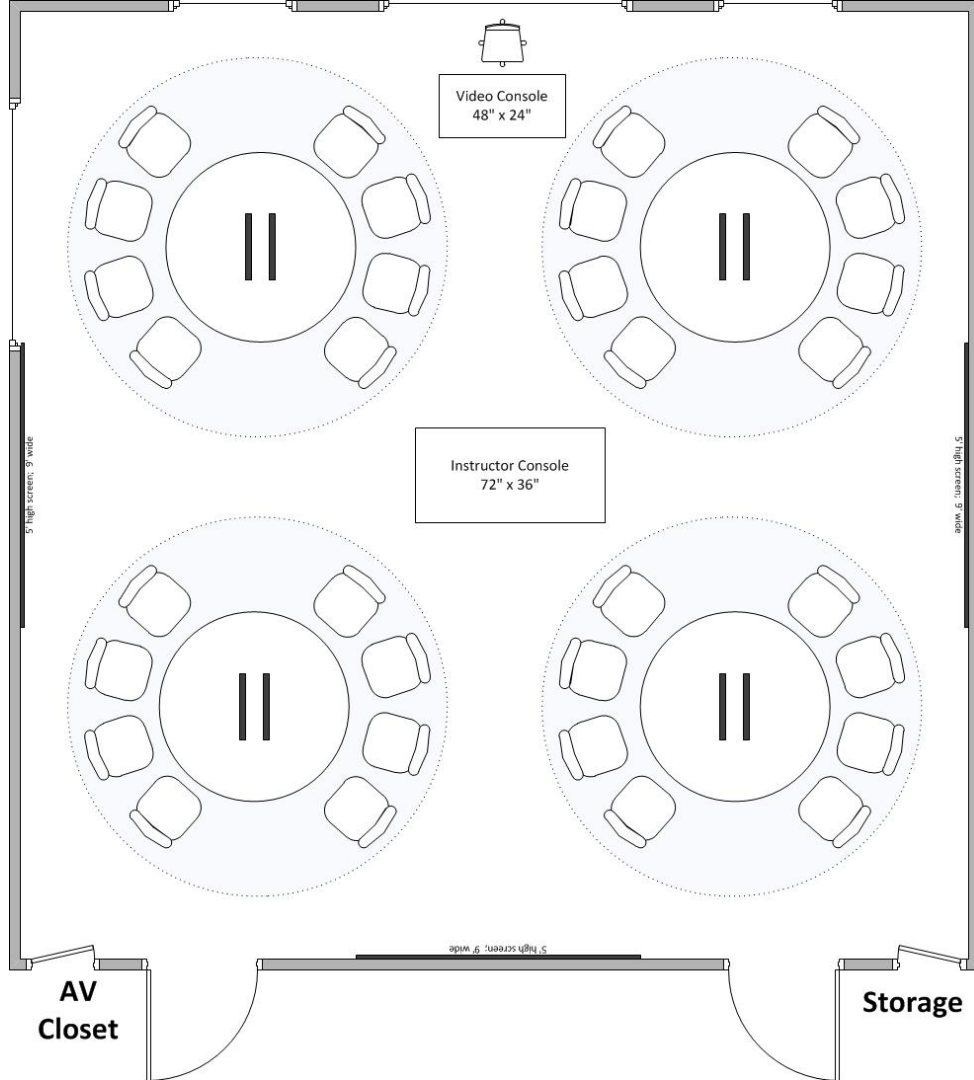
Round Tables



Round Tables



Round Tables



Brainstorm

- Extended hybrid software design process
 - Scenarios
 - Usability focus
 - Diverse participant skills
- End result... Adobe Connect
- Insufficient time, resources for custom software

Phases of Implementation



Phase 1: Renovation

- Room remodel
- Fewer chairs
- Update carpet, paint
- Changing teaching strategies (easing in)
 - Instructor as facilitator
 - Team-based activities



Phase 2: Getting Started

- Round tables and teams
- Team computers connected
- Dual projectors/whiteboards
- Schoolvue/Doceri
- Team-based learning
- All students in-room



Phase 3: Full AV System

- Crestron Digital Media
- Inputs
 - Instructor console
 - Team computers
 - Student laptops
 - 2 VGA, 1 HDMI per team
 - Capture HD
- Any input to any output



Phase 4: Adding Remote Students

- In-room video
 - Four HD PTZ cameras
 - HD video switcher
 - Integrate to Crestron
- Remote student capability
 - Adobe Connect



Next Steps?

- Herman Miller Learning Studio Research program data collection and analysis
- Heavener Hall Undergrad School of Business
- Scholarship in Teaching and Learning (encouraging faculty research)
- Share results and lessons learned

Lessons Learned

- Involve faculty
- Involve administrators
- Value of prototyping
- Software design process delayed the project



So you want to do this?

Classroom

- Beware asbestos! \$6,500
- Renovations \$38,000
- Whiteboards \$4,000



So you want to do this?

Furniture

- 7' round tables \$1,500 each
- Chairs \$165 each
- Instructor table \$1,300
- Host table \$600



So you want to do this?

AV

- Projectors \$8,000 each
- Screens \$1,200 each
- Digital Media and automation *highly variable*



So you want to do this?

Instructor HW & SW

- PC \$975
- Wireless Doc Cam \$700
- SchoolVue \$32 plus \$8/yr maintenance
- Doceri \$30
- Adobe Connect \$150/yr



So you want to do this?

Student PCs

- PC \$975 each
- 27" monitor \$325 each
- SchoolVue \$32 plus \$8/yr maint per PC
- AC Power
- Networking





<http://warrington.ufl.edu/activelearning>