

#### Meeting The Technology and Infrastructure needs for Emerging Trends in Online Learning

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### Agenda

- Our History in Distance Education
- Emerging Trends
- Current Delivery Modes
- Additional Capabilities
- Arnold E. Seigel Learning Center
- Support Infrastructure
- Physical Structure Highlights



### **Our History in Distance Education**

- Providing video-based, distance education since Fall 1980 as Instructional Television (ITV)
- Revamped mission focusing on Internet based delivery in the early 2000's
- Currently delivering ~5000 Hours of coursework per year
  - 80% New Content



#### THE A. JAMES CLARK SCHOOL $\textit{of}\xspace$ engineering

### **Emerging Trends in Online Learning**

- Khan Academy
- Stanford's Intro to AI
- Free Education Initiatives
  - Courser
  - edX
  - TED Ed
- Perfect Storm
  - Students are Digital Natives
  - Improving Technology and Techniques
  - Rising costs/debt burdens





### **Current Main Delivery Modes**



### Asynchronous Enrollments Trending Upwards



### **Additional Capabilities**

- Remote Teaching
  - "Anytime Anywhere" goes for the Faculty too!
  - Research Faculty
- Virtual Field Trips/Lab Visits
- Desktop videoconferencing
- Virtual Computer Lab



### **Arnold E. Seigel Learning Center**

- Centralized hub for technologyenhanced learning
- 6 Classroom studios
  - 18-122 seats
  - State-of-the-art AV
  - Centralized Technical Support



Supports wide range of teaching styles and delivery modes

### Support

- Personnel
  - 3 Layers of Classroom Support
  - Online Instructor Support
  - Materials Distribution
- Infrastructure
  - Multiple data centers
  - Physical and virtualized servers
  - Cloud based services
    - Learning Management System
    - Content Delivery Network



## Lighting

- Fluorescent
  - High efficiency
  - Color temperature controlled
  - Fully dimmable
    - Controllable by Faculty or Staff
  - Individually addressable fixtures
  - Lighting angles optimized





### HVAC

- New and Old Systems
  - Designed for future heat load expansion
  - Sound lined duct work
  - Different spaces have different solutions
  - All active devices located outside teaching area
    - VAV
    - Fan coil units
    - CRAC units
  - Low ducted returns no open plenum
  - 24/7 cooling with re-heat on demand





### Construction

- Rooms configured in ring
  - Hallway access for students
  - Central access for Staff
- Acoustic Construction
  - Contiguous spaces
  - Control room glass
  - Acoustic panels
- UPS system wide
- Technology access
  - Raised flooring
  - Rack access





#### Summary

The Clark School created a unique space to take advantage of the emerging trends and technological changes in online education



#### **Questions / Experiences**

• Share your experiences here

