

UCLA Office of Instructional Development  
Classroom Technology Business Plan  
2008-2012

## Introduction

The Office of Instructional Development has responsibility for providing teaching and learning technologies to UCLA general assignment classrooms in support of undergraduate instruction. The model for providing technology has changed over the years, driven by advances in technology, changes in the ratio between staff and equipment costs, and the needs and desires of the teaching faculty. UCLA classrooms reflect the technology and teaching methods of the era in which they were built.

In response to faculty demand and with support from the Chancellor, in 1980 OID spearheaded an ambitious collaboration among Capitol Programs, Facilities Management, the Registrar's Office and its own Media Systems Design group to develop a ten-year plan for:

- replacing damaged flooring and ceilings
- bringing rooms up to ADA access standards
- restoring or replacing damaged writing surfaces
- recovering seating or replacing missing seats
- painting walls
- enabling rooms to be darkened for projection
- building projection booths, where possible, in three large lecture halls
- installing screens in rooms
- equipping ten classrooms for media projection.

That plan was successfully concluded in 1990 and new practices were developed for cleaning classrooms, regularly cleaning boards and supplying chalk, scheduling media classrooms, and developing delivery systems for media in the 195 rooms which did not have installed equipment.

A second ten year plan was developed with more modest goals: attempting to refresh classrooms at least once every 20 years, and to install more media as faculty use of both film and video began to surge. This plan quickly foundered in the severe budget cuts of the early 1990's. The reduced circumstances forced a number of major concessions and an agenda which:

- limited room renovations and eliminated refreshment schedules
- decreased the number of equipment operators and converted those funds for the purchase of overhead projectors and television monitors

- phased out all equipment delivery and pick-up by mid-decade
- re-charged all professional school programs for media use
- emphasized equipment for the expanded use of video over film
- supported the industry changeover from 3/4 inch video to VHS video standards
- attempted to coordinate media installation and lighting changes with seismic renovation projects, rather than based on room conditions and use.

The 1994 Northridge earthquake further reduced resource availability, and classrooms again began to deteriorate, even as the faculty expressed interest in using expanded new media as part of their teaching. OID requested annual funding for the installation and upgrade of media equipment in classrooms, while continuing to act as an advocate to other campus units for refreshment and renovation of the physical facilities. The chancellor allocated \$463,000 annually for the media equipment, allowing OID to increase the number of equipped rooms to around 65, or 33% of the inventory. In 2005, an additional \$300,000 per year was approved by the campus administration, which has led to an additional 37 installations planned or completed by July 1, 2007. This represents roughly half of all general assignment classrooms.

In 1992, OID initiated a plan to connect all classrooms on campus to the backbone network. Then EVC Rich, suggested that the plan should be expanded to wire all workplaces on campus. While enthusiasm developed for the latter plan, classrooms, somewhat ironically, were left out of the agenda. OID redirected some internal funding and staff, and wiring of classrooms for network connection was finally completed almost a decade later, in 2004. Operation of the classroom network was then turned over to Campus Telecommunication Services.

As OID strives to build additional media classrooms and refresh current installations, the technology environment for classrooms continues to undergo continuous change. Media projection has progressed from film to 3/4 inch video to VHS video, to DVD video. Slide projection – a major classroom investment – is no longer viable as digital projection has overtaken the market. Electro-mechanical equipment has become much less common, and preventive maintenance is not possible for electronic equipment. Thus the emphasis must now be on replacement rather than repair. Microsoft PowerPoint and similar software require the use of digital projection in all classrooms. Faculty rely on the availability of digital projection regardless of class enrollment. As the basic equipment suite continues to undergo change, faculty express keen interest in using other systems: e.g. electronic writing tablets, personal response systems, live data streaming, wireless study groups, etc. The demand for faculty consultation in equipment use, software applications, teaching methodologies, and media alternatives has increased dramatically since 1998-1999 most likely covariant with the implementation of the Instructional Enhancement Initiative.

New media formats, and concerns about intellectual property, have created a radically different classroom environment. At the same time, technological capability often conflicts with legal capability. Increased use of new media has also expanded the use of traditional media. The use of time-shifting media systems – such as BruinCast, Video

Furnace, and Pod-casting – have expanded faculty initiatives for teaching in a next-generation format. Efforts to move instruction out of the classroom (such as evidenced by the BICs project) have not been embraced by either faculty or students. And when such projects are successful, they require a larger support system than the campus is capable of providing.

Technological changes often require additional large investments in resources – such as the current request to implement a campus-wide course management system. Much of this investment will reap only partial returns if classrooms remain one to three generations behind the current teaching environment.

The shift from delivery of overhead projectors and television monitors on carts to the installation of data/video projection systems with in-room sources and remote monitoring and troubleshooting has caused major shifts in both funding priorities and needs. OID, in consultation with campus partners and other UC experts, have used industry practices to develop UCLA Campus Classroom Standards. These standards define the equipment suite needed for each room to support currently accepted instruction practice. However, UCLA invests less per classroom for equipment and maintenance than do the other UC Campuses, and is comparatively behind them in the quality of the rooms. The existing budget allocation, even with the addition of recent augmentations, has reached the limit where maintenance and upgrade costs over the next five years will not support any additional room installations to meet the standards. Thus, while other UC campuses either plan or already have completed in room data/video projection in every classroom, UCLA is currently slightly over 50%, without existing or planned resource capability for augmentation.

#### Classroom Technology Business Plan

In order to enable UCLA faculty to achieve their full teaching potential, 100% of UCLA general assignment classrooms must have digital projection capability. To achieve this goal, the Office of Instructional Development proposes a five year plan for installation, upgrade, and maintenance of media equipment. As of July 1, 2007, there will be 95 classrooms without installed equipment. A total of \$1,947,710 in equipment expenses is required to complete the fitting of these rooms. In addition, based on the assumptions below, \$2,868,520 is required over the next five years to keep the classrooms refreshed with current equipment. Total cost, including staff and maintenance, over five years is \$8,845,154, of which current OID funding will cover \$4,831,330. The budget shortfall over five years is \$4,013,825, an average of \$802,765 per year. The following business plan, included as attachment A, are organized by building and outline the equipment investment and staffing needed to complete the Business Plan. The following information describes the assumptions used to create the spreadsheet.

## General

- Classroom technology standards are those described in UCLA Classroom Standards, Appendix 1. These have been developed by UCLA Media Systems design staff based on campus practice, UC wide consultation, and industry standards.
- Equipment costs are assumed to remain basically constant, as the pattern over the last few years suggests that price drops accompany increases in performance.
- Video Projectors need to be replaced every 5 years. Media source, switching, and control systems need to be replaced every 10 years. Sound systems, speakers, and screens need to be replaced every 15 years. These assumptions are subject to annual review based on technological change.
- Some rooms require a higher level of equipment than the standard to meet teaching needs.
  - Auditoriums require two projectors and two screens for displaying visual presenter output as well as subsidiary equipment such as personal response systems.
  - All auditoriums, and most large lecture halls where the room configuration is appropriate, will receive equipment to enable video webcasting. All classrooms, lecture halls, and auditorium will receive equipment to enable audio webcasting.
- Changes in technology are not accounted for. There are no current plans to upgrade to plasma monitors, high definition DVD players, wireless projection, etc. If these, or other currently unknown technologies become the industry standards, the plan may need to be revisited before the next five year cycle.

## Staffing

- Media Systems Design currently has 3 FTE: Senior Television Engineer, Senior Electronics Technician, Electronics Technician.
- Media Systems Maintenance currently has 1 FTE: Principal Television Technician
- Senior Television Engineer is likely to retire within 2007-2008, and will not be replaced.
- Expect 4 hours per week of engineering consulting, at \$100/hour, are needed to replace the higher level tasks currently performed by the Senior Engineer.
- The Senior Engineer will be replaced by an additional Electronics Technician.
- The current Media Systems Design and Media Systems Maintenance units will be operationally combined, with a total of four full time FTE to fulfill installation, upgrade, and maintenance tasks.
- Additional FTE requirements to be covered by contract labor, at an estimated \$30.00 per hour.

## Maintenance

- Media Rooms require the following maintenance:
  - Monitoring lamp life
  - Changing lamps
  - Changing out equipment
  - Sending out and monitoring equipment repair
  - Adjusting and tuning
- Annual Maintenance cost for all classrooms is cost of projector lamps, projected cost of repairs and replacements, and staffing.
- 1 FTE is required per 100 rooms for annual maintenance.
- \$1,000 per year is estimated for maintenance and replacement of parts. This would cover all equipment not specifically provided for in upgrade estimates.

## Installation and Upgrade

- Installations are estimated to require 220 hours to complete, or 0.1 FTE. This includes design, consultation, equipment research and procurement, installation, testing, and connection to existing networks and monitoring systems.
- Major upgrades, including replacement of a projector, installation of new switching and control equipment, etc. are estimated to require 110 hours to complete, or 0.05 FTE.
- Minor upgrades, including replacement of a computer, installation of webcasting and personal response system equipment, installation of a visual presenter, etc. are estimated to require 55 hours to complete, or 0.025 FTE.

## Visual Presentation Equipment

- All 200 classrooms currently have overhead projectors on carts. This equipment is obsolete.
- Replacement of overhead projectors with visual presentation equipment is included in the installation and upgrade equipment estimates. All over head projectors will be replaced with visual presenters. Installations will be permanent where possible, otherwise a cart will be used.

The following table presents the annual summary of the business plan for the next five years:

**UCLA Office of Instructional Development  
Classroom Technology Business Plan  
Summary and Analysis**

**Classroom Upgrade and Maintenance**

<b>Projected Annual Costs</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Installation Equipment Costs	\$ 192,940	\$ 368,920	\$ 456,650	\$ 638,130	\$ 291,070	\$ 1,947,710
Equipment Upgrade Costs	\$ 822,940	\$ 769,500	\$ 508,540	\$ 254,980	\$ 512,560	\$ 2,868,520
<b>Annual Equipment Costs</b>	<b>\$ 1,178,040</b>	<b>\$ 1,149,470</b>	<b>\$ 1,027,060</b>	<b>\$ 1,006,430</b>	<b>\$ 1,069,320</b>	<b>\$ 5,430,320</b>
Annual Staffing and Maintenance Costs	\$ 339,452	\$ 413,255	\$ 513,089	\$ 529,362	\$ 511,683	\$ 2,306,840
<b>Total Classroom Costs</b>	<b>\$ 1,517,492</b>	<b>\$ 1,562,725</b>	<b>\$ 1,540,149</b>	<b>\$ 1,535,792</b>	<b>\$ 1,581,003</b>	<b>\$ 7,737,160</b>
<b>Other Costs</b>						
Audio Visual Services Equip,	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 250,000
Audio Visual Services Staffing	\$ 160,000	\$ 165,600	\$ 171,396	\$ 177,395	\$ 183,604	\$ 857,995
<b>Total AV Services Costs</b>	<b>\$ 210,000</b>	<b>\$ 215,600</b>	<b>\$ 221,396</b>	<b>\$ 227,395</b>	<b>\$ 233,604</b>	<b>\$ 1,107,995</b>
<b>Total Annual Costs</b>	<b>\$ 1,727,492</b>	<b>\$ 1,778,325</b>	<b>\$ 1,761,545</b>	<b>\$ 1,763,187</b>	<b>\$ 1,814,606</b>	<b>\$ 8,845,154</b>

The plan was created by developing an individual design strategy for each general assignment classroom. A sample classroom plan:

**Botany**

**Room 325**

Lecture Hall, Category L  
Original Installation in 2004-2005

	2008	2009	2010	2011	2012
Projector			10,060		
Media Sources and Controls					
Sound Systems and Speakers					
Screen					
Visual Presenter	1,890				
Classroom Computer	2,860				2,860
Non-OID Expenses (Facilities, CTS, etc)					
Special/Additional Equipment	4,250				
	9,000	-	10,060	-	2,860