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Introduction

This report contains statistical data and information about the general assignment classrooms at UCLA, including current teaching and learning technology installations and plans for future upgrades. It also describes the development issues facing the Educational Technology Systems (ETS) unit, current and upcoming projects, long term plans, and information about procedures and equipment. Educational Technology Systems consists of:

- Audio-Visual Services
- Classroom Technology Design and Maintenance
- BruinCast
- Educational Technology Innovations

Audio-Visual Services provides technical support, training, scheduling, and other services directly to users of UCLA General Assignment Classrooms. Classroom Technology Design and Maintenance works with other campus units including Capital Programs, Facilities, and the Registrar’s Office to design, install, and maintain educational technology in general assignment classrooms. BruinCast is a service that records and webstreams undergraduate courses for use by students as a study aid. Educational Technology Innovations is the research, development and training unit of ETS, investigating and implementing technologies such as live streaming of courses, rich media presentation, enhanced podcasting, etc.

Classroom Equipment Statistics, as of Spring 2009

There have been approximately 200 General Assignment Classrooms available for instruction for the last several years. The number has varied as much as 5% annually due to construction, seismic retrofitting, and maintenance. In the last two years, three rooms have been permanently converted to departmental space, with only one replacement room provided. Additional conversions will make the availability of classrooms an issue.

- 100% have network and Internet access,
- 91% have installed video playback equipment,
- 59% have installed data projection projectors,
- 39% have installed classroom computers
- 11% have installed slide projectors,
- 28% have streaming or podcasting capability.
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During the 2008-2009 Academic Year OID...

- continued to install equipment to support the BruinCast course webcasting project, including audio-streaming devices in nineteen additional rooms,
- upgraded fourteen rooms to full technology classroom status,
- renovated the teaching and learning technology installations in several large lecture halls, including Dodd 147 and Court of Sciences 76,
- added classroom computers to ten technology classrooms,
- installed digital presenters in two rooms,
- began the process of removing legacy technologies (e.g. 35mm slide projectors and overhead projectors) from classrooms,
- supported the UC Less Commonly Taught Languages program with space, distance learning equipment and technical assistance,
- ran workshops, training, and events in the OID Training and Demonstration classroom in Powell Library,
- and continued to research and develop new classroom technologies to enhance instruction.
2009-2010 Newly Equipped Technology Classrooms

Summer ’09

Boelter 9436
Franz 2258A
Royce 362

Fall ’09

Geology 4645
Public Affairs 1337 and 1343
Bunche 3156 and 3164

Winter ’10

Math Sciences 5147 and 5148
Public Affairs 1323 and 1329
Bunche 3117 and 3123

Spring ’10

Public Affairs 1256, 1264, and 1270
Bunche 3143, 3153, and 3157

Classroom Projects 2009-2010

Classroom Equipment Enhancements

- Multiple Projectors – the addition of one or more projectors and screens to a room allowing display from more than one source.
- Audio Outputs – installation of an “audio-out” connection to the control panel to enable recording of the audio signal.
- Digital Presenters – intended to replace overhead projectors providing the same function with additional enhancements such as the ability to project three dimensional objects.
Installed Streaming Equipment

- Audio Streaming – installation of audio capture devices.
- Video Streaming – installation of video capture computers and infrastructure.
- Automatic Cameras – development and implementation of in-room cameras for automated video capture.

Videoconferencing Installations

- Powell Library – updating and replacing the outdated videoconferencing/distance learning equipment in Powell 285.

Classroom Equipment Refreshment

- Replace Aging Projectors
- New Screens
- Upgraded Control Systems
- Upgraded Sound Systems
- Upgraded Wireless Microphone Systems

OID Educational Technology Systems

Classroom Technology Planning

In 2006, OID developed and submitted a business plan to the Chancellor requesting funding to convert all UCLA general assignment classrooms to technology rooms, maintain them to current standards, and invest in emerging teaching and learning tools. The plan was funded beginning in the 2008-2009 fiscal year. The key points of the plan are:

- Classroom technology standards are those described in UCLA Classroom Standards, available on the OID website (www.oid.ucla.edu.) These have been developed by UCLA Classroom Technology Design and Maintenance staff based on campus practice, UC wide consultation, and industry standards. All UCLA Classrooms will meet these standards when the plan is complete.
- Equipment is to be replaced on a regular cycle. 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, including the large auditoriums, may require a higher level of equipment than the standard to meet specialized teaching needs. The Auditorium Standard is included as Appendix 3.

• 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.

• The plan does not account for changes in technology. As the plan approaches completion, the standards for each size and type of classroom will be evaluated for currency in light of the availability of newer teaching technologies.

A complete summary of the plan is available for viewing on the OID UCLA Classrooms Website, www.oid.ucla.edu

OID Educational Technology Systems
Classroom Technology Plan Updates

The Classroom Technology Business Plan was developed and presented for approval in 2006. Since that time, while the overall goals have remained the same, changes in the environment have necessitated revisions in some areas such as scheduling and staffing. In addition, growth in demand for the BruinCast undergraduate course webcasting program has led to reallocations of internal resources to meet that demand.

Changes to the Plan

1. Schedule Changes. The schedule of upgrades and installations in the Plan were developed using basic information such as equipment age and time since installation. However, real-world constraints such as availability of UCLA Facilities craftsmen and room schedules necessitate modifications to the listed classrooms. The current plan, showing the year of expected completion for all rooms on campus, is attached as Appendix 1.

2. Equipment Changes. Although the general types of equipment outlined in the Plan remain the same, specific brands, model numbers listed in the Cost Estimates page have been updated. One significant alteration is the decision to more closely tie the size, brightness and resolution of data/video projectors to the classroom capacity and usage. Thus, instead of two models only, multiple types of projector are now being used. An updated equipment list is attached as Appendix 2.

3. Installation and Upgrade Staffing. The plan originally called for an additional career Electronics Technician to meet the demand of the upgrade and installation schedule. Experience over the last three years since the plan was originally developed has shown that the current staff can handle most of the installation tasks, supported as needed by contract labor as needed.
4. Maintenance Staffing. Experience with the latest technology equipment has shown that the estimated number of 1 FTE per 100 equipped classrooms is still valid. However, at completion all 200 rooms will have an installed computer, which will stretch the resources of the OID Information Technology Services unit (the organization currently responsible for maintaining classroom computers.) Responsibility for the computers has now switched to the Educational Technology Innovations unit, which has trained Programmer/Analysts in place. An additional Programmer/Analyst has been hired, using classroom resources.

5. Auditorium Installations. The Plan called for multiple projectors and screens in each large auditorium on campus. Although the design of some of the rooms makes installation of this capability very challenging, new technologies now allow a single projector to create a split image generated from separate sources onto one large screen. The current auditorium standard, with a preliminary installation schedule, is attached as Appendix 3.

6. Webcasting Equipment. The Plan included installed equipment for course webcasting in many larger rooms, including Niagara web streaming encoders for video and Barix Instreamers for audio podcasting. Two additional years of the BruinCast program, including advances in affordable technology and increased student and faculty demand, have led to significant alterations in the methodology used to record and distribute course webcasts. Further information on course webcasting is available in the BruinCast Annual Report.

OID Educational Technology Systems
Technology Outlook

As the Classroom Technology Business Plan approaches completion, the majority of the rooms that remain are of lower capacity and a consistent design. Thus, over the course of 2009-2010, Educational Technology Systems will be moving towards the second phase of the Plan, involving less of a focus on new installations and more on maintenance, upgrade, equipment refreshment, and innovation. Much of the innovation will be centered on enhancement to webcasting and streaming capabilities, but there are areas where in-class teaching technologies can be brought to a higher technological standard.

Projection and Display

Educational Technology Systems currently installs single projectors in most classrooms with sufficient resolution and power to enable full lighting levels during presentation. Some larger rooms have multiple projectors, but many mid-sized classrooms are not appropriate for an installation of that type. One solution is to use split image processors, allowing a single projector to display two (or more) sources. Current display screens in classrooms will need to be upgraded to support this technology, as well as the shift to HD (High Definition) projection. ETS plans to upgrade all classroom screens within the scope of the Business Plan.
Some classrooms are appropriately sized for installation of large high resolution flat-panel monitors instead of the projector/screen combination. However, current security technology is insufficient to ensure theft protection. ETS is investigating the situation and working with vendors to develop solutions that meet our needs.

Control and Support

Over the last several years, a significant effort has been made to install the same control interface in all equipped classrooms. This is done to ensure that faculty have little to no learning curve when moving from room to room, as well as allowing ETS-Maintenance to repair and replace equipment on a very short timeframe. In addition, the equipment used allows remote troubleshooting and assistance, enabling a reduction in staff while increasing service levels.

Since all classrooms will have a computer installed, ETS is investigating combining the system web interface with the computer for an enhanced level of in-class management of the teaching technology. One potential result would be touch-screen control.

Media Sources

Currently, each classroom is equipped with a computer, interface for connection of the instructor’s laptop, a combination dvd/vhs player, and a composite input for connecting audio or video external devices such as CD players, cassette players, non-standard format video players, and video cameras. In addition most rooms have an overhead projector and a small number have 35mm slide projection capability.

As some technologies become obsolescent and are replaced by newer varieties, ETS must balance being up-to-date with an awareness that many instructors continue to use curriculum components in legacy formats. The transitions are made smoother when there is a replacement technology to replace the older one. For example, as overhead projectors are phased out ETS is installing digital presenters that serve the same function while including multiple advanced features. 35mm slides can be digitized and projected with equal if not superior clarity. VHS tape, which degrades over time, can be transferred to DVD or directly to a digital file.

**BruinCast Undergraduate Course Webcasting**

BruinCast now has a dedicated Annual Report. Please visit www.oid.ucla.edu to view.
Further Information

OID Educational Technology Systems supports teaching at UCLA by providing and supporting a current, practical, functional, and user-friendly classroom instructional environment. The parameters of this mission and the solutions to achieve it are constantly changing. For the most current information on OID-ETS and UCLA General Assignment Classrooms please visit www.oid.ucla.edu.
## Appendix 1 - General Assignment Classroom Status, As of 6/30/2009

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## Appendix 2 – Classroom Equipment Costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Equipment Type</th>
<th>Model/Vendor</th>
<th>Cost</th>
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<td><strong>Seminar Rooms, Category S</strong></td>
<td><strong>Projector</strong></td>
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<td><strong>Media Sources and Controls</strong></td>
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<td><strong>Sound Systems and Speakers</strong></td>
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<td><strong>Screen</strong></td>
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<td><strong>Classroom Computer</strong></td>
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<td><strong>Sound Systems and Speakers</strong></td>
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<td><strong>Screen</strong></td>
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<td><strong>Visual Presenter</strong></td>
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<td><strong>Additional Projector</strong></td>
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Appendix 3 - Auditorium Standards

Educational Technology Systems plans to upgrade the largest general assignment classrooms on campus to a higher level of teaching functionality. These changes, defined below, will allow instructors to make use of advanced teaching technologies such as audience response systems, digital presenters, multiple sources, side-by-side comparisons, etc. Due to the cost and complexity of the installations, the new standards will be phased in over several years.

Current Installation

LaKretz 110

Current Projects

Moore 100
Physics and Astronomy 1425
Franz 1178
Court of Sciences 50

Planned Future Installations

Rolfe 1200 Summer 2011
Dodd 147 Summer 2009
Fowler A103B Summer 2011
Broad 2160 Summer 2009
Humanities 51 Summer 2010
Haines 39 Summer 2010

Standards

- Two projection screens, one large main in the center of the front wall and one smaller off to one side. Both screens should be visible from all seats in the room. Some rooms depending on design, may have a third screen fitted.
- Two data video projectors, one for the large center screen and one for the side screen. If three screens are fitted, then a third projector will also be installed.
- If there is not room for dual screens and projectors, one each will be installed and fitted with split image hardware.
- Double width media cabinet with multiple sources (DVD, VHS, Computer, laptop interface) and projector switching to allow any output to be shown on any screen.
Additional controls and computer inputs may be located on a permanent or movable teaching podium.

- A computer connected to the media system and the data network installed in the media cabinet with the keyboard on an articulated arm for standing or seated use.
- An “electronic overhead projector” or digital presenter is provided for display of transparent or paper-based material. The output can be presented on a separate screen(s) to enable simultaneous use of the primary media system.