

University of Western Sydney Australian Students See the Light in “Lecture Halls of Tomorrow”



A biology professor guides students around an e.coli sample, magnified in gruesome high-definition detail on a giant projection screen overhead. Alongside the towering petri dish, the lecturer alternates between two secondary screens: a new-release Blu-ray documentary on cases of food poisoning in Australia, and an Internet database of drug-resistant strains of the virulent bacteria.

If it seems like a scene from *Grey's Anatomy* or a high-tech police autopsy, that may be precisely the point. As any university lecturer will tell you, in the modern computer age, it takes a lot more than a test-tube and a microscope to maintain the attention of today's technologically enlightened students.

According to one group of Sydney professors, however, Australia may finally have found the answer for producing engaging and continuously challenging lectures – and it does not have to involve deadly bacteria.

In November last year, the University of Western Sydney (UWS) began installing and testing a series of world-class interactive presentation technologies in nine of its lecture theatres – the foundations of a “rolling” technological upgrade that will eventually take in all six UWS campuses. At the Werrington South Campus, the linking of three lecture halls with fibreoptic cable has enabled presentations to be projected live to up to 700 students – the first HD facility of its kind in Australia.

The groundbreaking project was made possible through a unique partnership between Crestron Australia and New Zealand, Hills Sound Vision and Lighting (SVL), and leading installer-programmer, VisionX AV, based upon Crestron's new-generation DigitalMedia system, which allows virtually any AV source – digital or analog – to be distributed in acoustically perfect, cinema-style high definition.

“It's no exaggeration to say that we now have high-end lecture systems that are second to none in the world, with a level of operational flexibility that will guarantee that we are future-proofed to use the latest digital media for many years to come,” says Chris Simkin, Team Leader of Education Technology Services at UWS.

The world-first claim is a big one, but one that Crestron has no problem backing up.

“With the UWS system, we had to request Crestron International to extend the original DigitalMedia feature-set to ensure the best possible high definition quality while providing a suitable online recording media solution,” explains Jason Lewis, Crestron's National Manager in Australia and NZ.

As with any integrated HDMI education solution, the UWS system presented three principal challenges: to provide true high definition audio and video quality and user-friendly content management; to ensure compliance with HDCP content protection guidelines; and to facilitate the recording of presentations for later online viewing.

PROJECT SPOTLIGHT



“Our redesigned system allows a presenter to play a high definition film at 1080p while previewing teaching notes or other materials on their laptop, and to simultaneously make recordings that students will be able to download online,” Mr Lewis says.

“It was a real challenge for Crestron to enable presenters to record a file that would be small enough to download online without unduly affecting picture quality, while simultaneously preventing unauthorised copying of HDCP content. With the UWS solution, I think we’ve succeeded on all fronts.”

Walk Up and Plug In

DigitalMedia – the centerpiece of the landmark UWS installation – has been designed as a “walk up and use” system, enabling lecturers to arrive and instantly connect their laptop and digital media devices to a PC with a touchpanel and document camera at the lectern. They can then project any file through the split-screen HD projector, which enables two sources to be viewed simultaneously, while providing on-screen annotations with the use of a digital pen.

“Because these annotations are also being transmitted electronically, it means that you can record the images with the annotations, so that your students can view exactly the same thing later online,” explains Chris Simkin. “So it’s really a huge advance on previous whiteboard technology.”

Crestron and VisionX worked closely with UWS’s five-strong Education Technology Services team, as they ironed out glitches in the installation and made sure it answered the very specific and practical requirements of the university’s different courses and training methodologies.

“In recent years, we had come to realise that we needed to future-proof ourselves for the world of high-definition AV, which has really started to take off,” says Mr Simkin. “When the next generation of laptop computers comes out and they don’t have any analog outputs, we’ll have to be ready to let people plug their digital devices into our lecture theatres in whatever shape they come in. With this system, the matrix switcher that switches your sources to the projector is a card frame device, so when new digital outputs emerge, we’ll only need to put in a new card – as opposed to a whole new switcher!”

As well as the straightforward presets and intuitive navigation for which DigitalMedia is renowned, the robust fibreoptic links between the Werrington South theatres guarantee the highest quality of digital imagery and seamless switching between all local HDMI sources and those in adjacent rooms.

But the beauty of DigitalMedia is that you don’t have to leave behind your beloved analog devices either, says Stuart Nicholls of VisionX, whose 12 DigitalMedia university installations to date makes him something of an authority on the subject.

“With DigitalMedia, Crestron has jumped ahead of everyone with an all-encompassing solution that combines old analog and new digital under one manageable switching solution,” says Mr Nicholls. “Before Crestron released DigitalMedia, most lecture theatres had analog backbones, so providing a full HD digital backbone that can manage all devices like this is a huge leap forward. It’s not just an evolution but a revolution for tertiary education in this country.

“DigitalMedia provides full HD resolution from a multitude of sources without any compression or transformation of the images. By avoiding any scaling up or down, it ensures that every image remains pure.”

DigitalMedia incorporates Crestron’s proprietary QuickSwitch software, which maintains a permanent connection with every connected HDMI device and thus eliminates the need to re-authenticate each time a different source is selected.

“The DigitalMedia system is the only system in the world that caches HDCP content from source to provide the fastest possible switching times,” explains Jason Lewis. “At present it provides up to 32 sources in and out, but this will probably be expanded to 128 sources by the end of next year – enabling us to apply this same quality and control to individual screens across very large entertainment and convention venues.”

University of Western Sydney



Equipment

Crestron TPMC12B Touchpanel
Crestron DVPHD-CUSTOM with Guide Bar (GB)
CP2E Crestron Compact Control System with Ethernet
Crestron DigitalMedia DMMD8x8
Crestron DigitalMedia DMMD6x1
Crestron DigitalMedia DMRMC100
Crestron DigitalMedia DMCCAT
Crestron DigitalMediaDMCHDDSP
Crestron DigitalMedia DMCF
Crestron DigitalMedia DMCO output cards
MP-WP Crestron Series Wall Plates
Ampetronic Hearing Loop System ILD500 + FC18 Cable
Australian Monitor Amplifier AMIS 250 P
Australian Monitor Mixer MX92
Mipro Wireless Microphone System ACT707SE + ACT707TE

About Hills Sound Vision and Lighting (Hills SVL)

Hills Sound Vision and Lighting (Hills SVL) is the leading provider of professional audio, audiovisual, lighting and digital signage solutions in Australia and New Zealand.

For over three decades, we have led the market in the seamless integration of next-generation audio, audiovisual, control and lighting technology. We are a division of Hills Industries Limited and have branches in Sydney, Melbourne, Brisbane, Adelaide, Canberra, Perth and Auckland.

Since 2005, we have been the Australian home of Crestron products, introducing the power and reliability of the world's most advanced electronic control systems into homes, offices, schools, shopping centres and entertainment venues across the country.

Today, Hills SVL is making soundwaves that are circling the globe, with our Australian Monitor Revolution Series, AMD mixers and amplifiers attracting sales – and acclaim – on all five continents.

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