

Electronic classroom sparks students' attention

By ERIC E. MUNSON
Collegian Science Writer

A new electronic classroom enables University students to communicate with professionals in industries throughout the country.

With the use of a new electronic classroom and satellite uplink — equipment used to transmit video and audio signals to a satellite — students may now see and talk to people anywhere in the United States.

The electronic classroom, which is run by WPSX and located in 106D Mitchell Building, houses four video screens, television cameras and an elaborate ceiling microphone system used to pick up the voice of anyone who is speaking in the classroom.

"It's like something out of 'Star Wars,'" said Jim Canelos, director of instructional development in the University's College of Engineering.

Installed in early September, the electronic classroom and satellite uplink are used by many different organizations at the University.

The room is used by the University to send live broadcasts of lectures at University Park to Commonwealth campuses around the state, Canelos said. It is also used by the electrical engineering department in its Electrical Engineering 449 design course, he said.

Under the instruction of David Landis, assistant professor of electrical engineering, students in EE 449 use the electronic classroom to talk to engineers from IBM in Manassas, Va., about ideas for their semester design projects.

In EE 449, "Very Large Scale Integration," students are required to design a microchip that will do a specific task they choose, Landis said.

During a two-hour meeting last month — conducted in a panel discussion format — students

from EE 449 talked for the first time to 10 IBM engineers who offered ideas to improve students' design projects.

All but four students in the class participated in the discussion at the electronic classroom, for which attendance was not mandatory, Canelos said.

Canelos, co-worker with Landis on the electronic classroom project, said student reaction has been positive.

"So far, reaction is incredible," Canelos said. "I've never heard so many questions asked in two hours."

The effort to link students with engineers in industry is one of many National Science Foundation projects designed to improve engineering courses at universities in the United States — including Penn State — Canelos said.

Under one of these NSF projects, a series of 10 videotaped lectures are seen in EE 449. These videotapes show IBM engineers discussing or demonstrating projects they are working on in classrooms or laboratories at IBM, Landis said.

While students watch the videotapes, they can talk to and ask questions of engineers through a special conference phone line set up in the classroom, he said.

"It's much better to have a live person here because they are much easier to talk to," Landis said. "This way (speakers) don't have to make a special trip to give a lecture."

Students in EE 449 may also talk to IBM engineers through electronic mail. Using an engineer's computer identification code, a student may type a letter through the University's computer system and send it to the engineer's computer system, Canelos said.

"All they have to do is sit at the terminal and bang away at the keys," he said.

The electronic classroom facility is available for use by different University groups who submit a legitimate proposal on why they want to use the facility.

"It is getting discovered," Canelos said. "Others are starting to use it."

Penn State is not the only university to have such a system. Georgia Institute of Technology in Atlanta and University of Wisconsin in Madison are among 13 universities that participate in the NSF's program and have similar facilities, Landis said.

Facilities at these universities are used for purposes such as electronic plant trips in which students view the interior of a plant without having to be there, Landis said.

"You can use the facility to give students a trip to a chemical plant — something they couldn't do in person," he said. "We are the only university using (the electronic classroom to get professional advice)."

A requirement of the NSF program that links students and industry is that the two parties must have a satellite uplink and downlink, Canelos said.

These are electronic devices used to communicate with an orbiting satellite, which relays the pictures and sound from place to place.

Throughout the semester, students in the class will complete questionnaires to see if they are learning anything new and if they are improving in class, Canelos said.

The second and final meeting of the semester between the IBM engineers and EE 449 students will be held Dec. 1, Landis said. At this time, the students will ask more questions about their design projects.

The facility is seen by Canelos as a valuable teaching and learning tool which should be used more often.



Microphones above the seats pick up discussions from Room 106D Mitchell Building and transmit them to locations such as Behrend and Hershey campuses.

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