A Hybrid Distributed Education Model for International Graduate Engineering Education

The Hybrid Distributed Education Model used to deliver the Carnegie Mellon Master of Science in Information Networking (MSIN) in Athens, Greece consists of three main components: core courses taught over synchronous distance learning technologies, electives taught using traditional face-to-face instruction and an online community for student and faculty interaction outside of the classroom. An optional fourth component is the opportunity to engage in a semester abroad.

Core courses are taught from Carnegie Mellon’s main campus in Pittsburgh, Pennsylvania to Athens via real-time video teleconferencing (VTC) technologies. A co-instructor in Athens facilitates interaction amongst the Athens students and the Pittsburgh classroom, holds recitation sessions, and administers the grading for the Athens students’ work.

Lectures are videotaped, digitized, and converted to streaming format within 24 hours. A smartboard is used as an electronic whiteboard and enables instructor notes and annotated lecture slides to be streamed in real-time to the remote classroom in Athens and saved for later review. The Blackboard course management system acts as a central interactive repository for all course materials as well as a tool for online community building outside of the classroom.

Carnegie Mellon faculty also spend at least one week per semester on-site in Athens. During their week in Athens, at least two lectures are taught from Athens to Pittsburgh via distance learning technologies, giving the Athens students an opportunity to experience face-to-face instruction while the Pittsburgh students experience class as remote students. Athens students have the opportunity to travel to Pittsburgh to experience a semester at Carnegie Mellon’s campus.

A comprehensive educational assessment process ensures quality of education and student satisfaction with the program. The assessment comprises: direct classroom observation, inter-rater grading analysis to ensure grading consistency, tracking of overall performance, online surveys and focus groups to measure student satisfaction, faculty course evaluations rating overall course quality and quality of the instructor, and continuous evaluation of distance learning technologies. To date, the education assessment results show no significant difference in performance and learning outcomes between the Pittsburgh and Athens students.

This Best Practices session will provide an overview of the delivery and assessment model and lessons learned over the course of the four years of this program.