

DISTANCE LEARNING IN ENGINEERING

A Dean's Perspective

Amir Mirmiran, Ph.D., P.E., F. ASCE, F. ACI

Definition and Types of Distance Learning

- Definition: Planned teaching/learning experience that employs many instructional methods and uses a wide spectrum of technologies to reach learners at a distance.
- Types
 - By correspondence: mail, audio tapes, videos, and recently CDs
 - By internet
 - Fully-online: passive, non-interactive, and fully autonomous
 - Video streaming: Synchronous and a-synchronous
 - Hybrids: in-class exams (FEEDS as an example)
 - Others: TV and radio (popular in China).



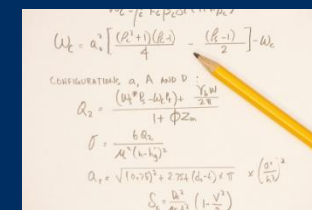
Trends and Challenges Facing Higher Education

- Universities are feeling the pressure to:
 - Control costs by cutting overhead;
 - Improve quality of instruction;
 - Focus on customer needs;
 - Respond to the competitive pressures;
 - All while trying to serve an ever growing student body.
 - Simply: meeting increased demands at a time of decreased resources.



Promises and Possibilities of Distance Learning

- Distance learning technologies have the potential to assist in solving these problems by:
 - ✓ Increasing or maintaining access: delivering education to students that are unable to attend classes because of time or distance.
 - ✓ Increasing cost effectiveness: class size increases while the overhead remains the same.
 - ✓ Improving quality of instruction: better and more effective use of technology.



Distance Learning Models at *FIU Engineering*

- FIU Online
 - Fully online courses.
 - Slides, short videos, solved problems, etc that are posted on the course website.
 - Self-managed by the student
 - In-class final exam or project.
 - This mode is not currently being used by the College of Engineering and Computing at the undergraduate level, except for in computer science and construction management.



Distance Learning Models at FIU Engineering

- FEEDS (Florida Engineering Education Delivery System)
 - Courses delivered through streaming video over the internet.
 - Lecture videos available to students for a period of one week.
 - Students enrolled in FEEDS courses submit (online) the same assignments as the in-class students, and at the same time.
 - FEEDS students sit for the same exams as the in-class students.
 - Basic difference between the two sections of the course is the mode of attendance: physical presence in the class room verses streaming video over the internet.



Distance Learning and ABET Accreditation

- How many courses or percentage of courses can be offered in any particular academic term?
- For any particular undergraduate engineering student, how many total credits can be taken over FEEDS and Online?
- What categories of courses (e.g., general education versus engineering topics) should not be offered via FEEDS (if any)?
- What aspects of the nine (9) general criteria, for baccalaureate programs, need to be addressed or modified by programs (if any)?
- Any other issues that need attention to ensure our current accreditation status?





Discussion