Hybrid Learning Implementation in Construction Engineering
A Case Study

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Instructional Designer

- Ph.D. Curriculum and Instruction (2013)
  - Specialization: Instructional Technology
- Interests
  - Online and hybrid course design

- Technology integration in higher education
- Innovative teaching strategies and techniques
Hybrid Course Design for Undergraduate Education

Online

Face-to-face
Hybrid Courses in Civil and Construction Engineering

- Construction Equipment
- Planning, Scheduling, & Control
- Estimating
Outside the class

Bloom’s Taxonomy

Knowledge

Understanding

Application

Analysis

Synthesis

Evaluation
• Chunked into smaller, manageable parts
• Enhanced through use of visuals
• Enhanced through animations to highlight important information
• Quiz questions are integrated
Online Modules

- Step by step problem solution
- Problem solving demonstrations
- 2 attempts
- Immediate feedback
- Scores are stored into Bb Learn
- Additional information
Developing Online Content

- Instructional Design Team
  - Instructor
  - Instructional designer
  - Content expert
  - Student assistants
Time Commitment for 50 minutes of Content

**Lecture**
- 8 steps
  - 9 with out narration
- 11 hours
  - 16 with narration

**Module**
- Instruction Provides Video
  - 5 steps
  - 12 hours
- Starting from scratch
  - 10 steps
  - 27 hours
In Class

Bloom’s Taxonomy

Knowledge

Understanding

Application

Analysis

Synthesis

Evaluation
In-Class

- More interaction
- Work in small groups
- Open-ended problems
Scheduling – Larry Cormicle

- Selected theoretical timeless concepts
- Video captures his own private lecture
- Raw video is class notes with hand annotation
- Converted to animated power point by team
- Retains original audio
- Obtains considerable student feedback for improvement
Cost Estimating – David Jeong

- Video capture during regular lecture
- Generate PPT and transcript
- Native English narrator
- Lecture and modules
- Activities problems provided by industry
- Optional videos on estimating software application
Benefits

Students

• Flexibility
• Self-paced learning
• Improved learning

Faculty

• Flexibility
• Released time for interactions
• Structure for including TAs
Challenges

Faculty
- Initial time investment
- Technical Issues/Expertise

Students
- Different learning environment
- Technical issues
Questions?

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