Why a workshop on course design?

An essential act of our profession as Professors / Course Instructors is to:

A. Design curriculum and learning experiences that meet certain Instructional Objectives

B. Design assessments to:
   1. Determine whether course goals are being achieved
   2. Diagnose student needs to guide our teaching.
What does tango have to do with it?
Why a workshop on course design?

The effectiveness of:

- Our courses: ultimately determined by student achievement of course learning objectives (CLOs).

- Our curricula: ultimately determined by student achievement of Program Outcomes (POs).

- AE Program: ultimately determined by alumni achievement of Program Educational Objectives (PEOs).
Teaching & learning are correlative or corresponding processes, as much as selling and buying. One might as well say he has sold when no one has bought, as to say that he has taught when no one has learned.”

James L. Melsa, Dean Emeritus, Iowa SU, 2007 ASEE President, ASEE Prism, Sep.07
Major advances understanding how people learn, in past 2 decades from:

- University Science &
- Classroom Research
- Cognitive Psychology
- Brain Research
Pedagogy 😞

Despite all this new knowledge, engineering teaching is in a place comparable to where medicine was 150 years ago 😞

✔️ Standard Treatments: Tradition & Superstition, despite growing scientific knowledge at the time

Carl Wieman, Professor of Physics & Graduate School of Education, Stanford University, 2001 Nobel Prize in Physics

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Why a workshop on course design?

Subject Matter Knowledge

Pedagogical Knowledge

Experience + Reflection

Pedagogical Content Knowledge
Components of Education

- **Knowledge**: the database of a professional
- **Skills**: tools used to manipulate knowledge in order to meet a goal dictated or strongly influenced by...
- **Attitudes & Values**
Learning Objectives
(Where do I want to take my students – intellectually, physically, emotionally?)

Learning Activities
(How do I take them there?)

Assessment
(How will I know they have arrived?)

Content
Learning Objectives
(What should students be able to do at the end of the course?)

Content

Learning Activities
(How do students learn best?)

Assessment
(What is acceptable evidence of learning?)

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Nikos J. Mourtos
Learning Objectives
(What should the students be able to do at the end of the course?)

Assessment
(What is acceptable evidence of learning?)

Learning Activities
(How do students learn best?)

Instructor Goals
Program Outcomes

Content

6 Facets of Understanding
Application Model
Bloom’s Taxonomy

Taxonomy of Significant Learning
Classroom Assessment

SL
IBL
PBL
CL
AL

Case Studies
Role Playing

Field Trips
Debate
Simulation
Labs
Lectures
E-portfolio
Surveys
Tests
Papers
Reviews

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WORKSHOP OBJECTIVES

1. Introduce the basics of learning theory
   a. Conditions of Learning
   b. Bloom’s Taxonomy of Educational Objectives
   c. Teaching & Learning Styles
   d. Active, Cooperative, Problem-Based Learning, Inquiry-Based Learning

2. Apply learning theory to design your course
   a. Define course learning objectives
   b. Design course assessment
   c. Design learning activities

3. Create a Learning Community
Alice Walker, author of “The Color Purple”:

I imagine good teaching as a circle of earnest people sitting down to ask each other meaningful questions. I don’t see it as a handing down of answers.