FOUNDATIONS OF ENGINEERING EDUCATION AND LEADERSHIP

Course Overview

In this course we will take an evidence-based approach to understanding how learning works. From this basis, we will expand into how these concepts apply to teaching and learning in engineering education. Each topic that we cover in this course will therefore include grounding theories found in literature as well as tools for application in the classroom. Potential topics to be covered include:

- The role of prior knowledge
- The role of knowledge organization
- Student motivation
- How students develop mastery
- Feedback that helps students learn
- Impact of course climate
- Self-directed learning
- Tools related to achieving each of the above
- Curriculum design

"Learning is a process not a product...Learning involves change in beliefs, knowledge, behaviors, and attitudes...Learning is not something done to students, but something students do themselves."

- How Learning Works

Course Activities

As a course focused on evidence-based approaches to teaching and learning, students will have the opportunity to apply a variety of these principles throughout the course. Therefore students should expect:

- Extensive reflection activities
- Writing assignments
- A curriculum design project
- Opportunities to teach in class
- Highly interactive course meetings

Key Course Goals and Outcomes

Learning vs. Teaching	Self Directed Learning
Design & Creativity	Hands-On Prototyping
Real World Context	Instructor Toolkit
Teamwork	Teaching Experience

Tentative Course Schedule

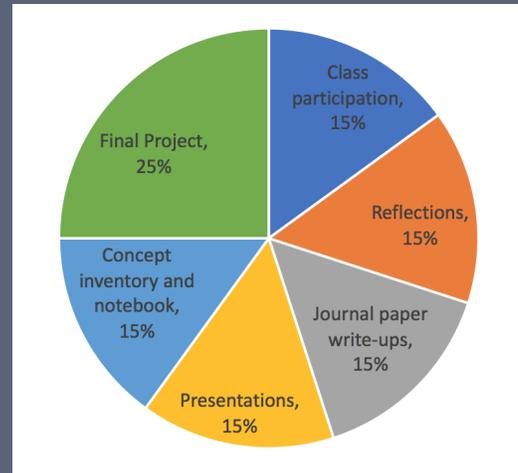| Week	Topic
1	The role of prior knowledge
2	The role of prior knowledge
3	The role of knowledge organization
4	Student motivation
5	Student motivation
6	How students develop mastery
7	Feedback that helps students learn
8	Impact of course climate
9	Self-directed learning
10	Student selected teaching tools from appendix
11	Student selected teaching tools from appendix
12	Curriculum Design Lab
13	Curriculum Design Lab/Thanksgiving
14	Curriculum Design Lab
15	Final Project Practice
Final	12/13 @ 10 am

Meeting Times & Locations

Tues (Lecture) & Thurs (Studio) from 10:30-11:50 am

All in E-Lead Studio's Conference Room
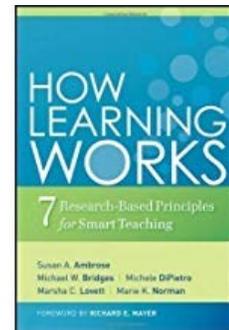
Grading Overview

- Each week, students will have assigned reading as well as a reflection and literature review to complete.

- We're all adults, so students are expected to attend class. Failure to attend will result in a drop in participation grade based on the activities in class that day. Absences can be arranged in advance with Dr. K.

- Students need to maintain a notebook throughout the course.

- The final for this course will be the final project.

Pie chart: Final Project, 25%; Class participation, 15%; Reflections, 15%; Journal paper write-ups, 15%; Presentations, 15%; Concept inventory and notebook, 15%

Required Materials

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. John Wiley & Sons.

Assorted journal articles as assigned.

Legalese

Academic Dishonesty

Students are encouraged to collaborate throughout the semester but all graded materials must represent the student's individual work. (When in doubt, ask!) Academic dishonesty is the attempt to present the work of somebody else as his or her own work or attempting to pass any assignment by improper means. It is a serious offense and will not be accepted. Any misconduct will be handled according to the current university policy and reported in accordance with university regulations. For more info visit the Dean of Students or http://studentaffairs.utep.edu

Special Accommodations

If you need accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. Additionally, please visit the CASS website at www.sa.utep.edu/cass. CASS' Staff are the only individuals who can validate and if need be, authorize accommodations for students with disabilities.

See also separate Course Policies Document for policies on attendance, use of electronics, late submissions, teamwork, etc.

Instructor Info

Dr. Meagan Kendall

mvaughan@utep.edu
EEL Department, E230A
Office Hours: T & Th
12:30-1:30 pm or by appt.

Course Website

Blackboard

Work in Progress Disclaimer

This syllabus is a work in progress! The faculty reserve the right to modify it as necessary throughout the semester. However, I will do my best to adhere to this syllabus and will notify you if anything must change.