

INFORMED CONSENT, COMMITMENTS AND PLEDGES – SYLLABUS – FALL 2014: MATE340

As a Professional Engineer, I dedicate my professional knowledge and skill to the advancement and betterment of human welfare. I pledge:

- To give the utmost of performance;
- To participate in none but honest enterprise;
- To live and work according to the laws of man and the highest standards of professional conduct;
- To place service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations.

In humility and with need for Divine Guidance, I make this pledge. – *Ethics Creed, National Society of Professional Engineers, 1957*

Date: September, 2014

Purpose of this document:

This document is to communicate to you by beliefs, my aims, commitments and pledges. In return, if you choose to take the course, I'd like you to provide me a list of what I can count on you for (i.e., your "pledges").

My beliefs and biases: It's my personal conviction that the future will be very different from the past. The future that I imagine requires many things of citizens. One of them is what is called "adaptive capacity" in the research literature. It is basically a kind of flexibility in learning. It's my belief that much, but not all, of what we do in college courses undermines your capacity to develop in ways that are helpful to this future that I imagine, including the development of adaptive capacity. For me, I feel compelled to create a learning environment that enables you to develop the capabilities that I believe are necessary. This course is part of my research as an engineering educator in the tradition of action research.

It is entirely possible that I am wrong about my understanding of what the future holds. However, I can't know this, so I am left to act on my convictions.

How this course will be different from "traditional" courses: This course is designed so that you may 1. Build your resilience as a life-long learner ; 2. Construct your foundational understanding of materials so that you can also understand the electronic, optical and magnetic properties of materials; 3. Begin to integrate some of your knowledge from other foundational engineering courses into applications that could be useful as sensors and actuators for future projects.

Office hours: These are on PolyLearn: M2-3 (building 38, room 121); T 3-4 PM; W 12-noon (building 38, room 121); Th 3-4 PM

THIS CLASS IS AN EXPLORATION IN THIS QUESTION:

How do materials respond to electromagnetic forces?

The course is organized around these applications: resistors (thermistors); capacitors; thermocouples; light emitting diodes; motors; piezoelectric transducers; liquid crystal displays

Textbook: Kasap, S. O. "Principles of Electronic Materials and Devices." 2e. or 3e., McGraw-Hill (2000).

Materials: Arduino Uno microprocessor, sensors, breadboard, and miscellaneous devices

You can count on me to:

- Attempt to see you for who you are, rather than through stereotypes;
- Welcome different ways of understanding, knowing and being;
- Attempt to understand your point of view;
- Attempt to be fair, including a fair consideration of ideas;
- Prepare before coming to class so that I don't waste your time;
- Learn with you;
- State when I am at the limits of my knowledge;
- Use the most current scientific understanding of how people best learn in designing our time;
- Incorporate your ideas and interests into the class design;
- Trust that you know your self and your needs, interests, and values better than I do;
- Honor your decisions about whether to participate in class meetings and homework (meaning: I will not judge you or guilt you if you choose not to come to class or not do the homework, but trust that you are making conscious choices that serve you best).

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I'd like to request a few things of you.

Can I count on you to:

- Own your decisions and their consequences (including the consequences for your teammates)?
- Come to class only if you want to be here and participate as fully as you are able?

Name _____

What is it that you want to take away from this 90-120-hour investment of your time?

You can count on me to (please write whatever is true for you about your participation in this class):

Signed: _____ date: _____