It is often useful to recall that teaching is not learning. I see my role as a teacher as one who provides the resources and environment necessary to facilitate learning. In this regard, there are three key points upon which my teaching philosophy, and therefore my teaching style, is based. I use design problems and short, focused problem-based learning (when appropriate) to keep students engaged, interested, and thinking critically. For an example, browse around at http://www.ohio.edu/people/tc285202/ME288.html.

1.) True learning is hard.

- The more a student is forced to pick apart a concept in their own mind, the more their understanding of that concept will increase. Large gains can be made by a shift in focus from teaching strategies that promote recitation of processes and concepts to include strategies that force students to think creatively, and execute that creativity in design.

- Design is a unique process because at the least, it can require application and analysis, but often requires synthesis and evaluation – the creation of something new. A very well-defined, tightly constrained problem can approach a simple recitation exercise, while a wide-open, relatively unconstrained problem can require mastery of the subjects involved.

2.) Application is key.

- A wise professor of mine once said, “You are engineers. Engineers design; that’s their main purpose in life, and because of that…they always relate [calculations] to something real, so it’s not just a bunch of numbers.”

- Real-world examples allow real-world questions to come into the discussion. Application examples can close the loop for students by allowing them to try out their solutions, and discuss the ramifications of their decision making.

- Student engagement is hugely improved when they see direct application of the knowledge they’re pursuing.
3.) Every student learns differently.

- Different learning types require material to be presented in a fashion that plays on these differences. Some students need to hold parts in their hand, others need to see pictures, and still others need to hear someone talk and answer questions about concepts. I take a multi-faceted approach that includes problem solving, reference materials, discussion and online instructional videos.

- I cannot make students learn, but by identifying what is holding back their understanding, I can work to remove those barriers using tools that cater to their learning styles. When students are themselves aware of how they learn, sometimes quick, easy access to information is all they need.

- Problem solving and design can expose misconceptions for the students in their own style, allowing quick leaps forward of understanding.