

## Teaching Philosophy Statement

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Shaping the future of any country is driven by a variety of factors. It is my strong belief that the most important factor in shaping the future is education and more specifically, teaching. My first academic teaching experience was as the result of an inquiry that I made to my academic advisor, Dr. Erian Armanios. I was seeking advice on how to prepare for the Ph.D. qualifying exam, which is a totally oral exam in the School of Aerospace Engineering. My advisor did not merely give me advice ... he assigned me to be a Teaching Assistant (TA) for his "Introduction to Structural Analysis" class. He stated that by teaching the problem session of the class it would provide me with the skill of explaining my ideas to audiences and also give me insight into learning styles. The advice given to me by Dr. Armanios is summed up in this quote by Aristotle, "*Teaching is the highest form of understanding*".

A major component of teaching is the ability to recognize the different learning styles of students. The learning styles of the students are directly related to their educational background, and maturity. Consequently, I take the opportunity to familiarize myself with the various learning styles of my students. My philosophy is that getting to know the students plays an integral role in motivating them to learn. It is also important to start from basic concepts that the students are familiar with, then build upon the concepts to reach the targeted learning objective. An article by L. Spense entitled, "Maybe Teaching is a Bad Idea" stressed on how essential it is to plan your objectives. The article also focused on showing the importance of preparing students for today's work world by helping them realize the value of continuous learning, the ability to observe, think and conclude. Applying these concepts ultimately resulted in making the class problem sessions more beneficial to the students and me. Coincidentally, with each problem that is discussed, I always try to correlate it to a real life, practical application. This helps the students not only appreciate what they learn inside the class, but they start to observe more and learn from what they see and experience. The style in which the problem session is conducted is a succession of introductions, discussions and conclusions of applications. I also conduct classes using one of the oldest pedagogical tools, the board. The power of using a white board or blackboard cannot be underestimated and I find it is still one of the best ways to teach. One basic and obvious reason for using the board is that the students prefer it. It is intuitive that the rate of exchanging information and interacting with students is optimized when a board is being used. This doesn't render the current technology such as power point presentations obsolete. In fact, power point presentations with illustrations are used simultaneously to complement the board method.

I maintain office hours but also have an open-door strategy. My office policy is simply that "If you have the interest to know, I have the time to explain". In some cases there are students who are unable to attend problem sessions due to class conflicts. I believe that these students should have the same opportunity as their classmates, so they are offered a time to stop by that fits their class schedule. Office hours are also offered to a select group of students in the distance learning section of the "Mechanical Behavior of Composites" class. Phone office hours are most feasible means of reaching the distance learning students, although in some cases it is not an easy job to explain complicated

concepts over the phone. The use of class videos, handouts and text books greatly enhances phone communication. If the answer to a certain question is hard to visualize over the phone, I prepare a set of color coded illustrations and send it to the student and then discuss it over the phone. On some occasions I am able to meet with the distance learning students on weekends at the library to discuss their questions.

My sentiments toward teaching are echoed by K. Patricia Cross, who very eloquently states that *“The task of the excellent teacher is to stimulate ‘apparently ordinary’ people to unusual effort. The tough problem is not in identifying winners; it is in making winners out of ordinary people.”* I believe that a good teacher will customize teaching methods to students. I embrace the opportunity to reach out to weaker or introverted students or with those with special needs. Providing a friendly atmosphere of cooperation and understanding results in better exchanges and the students ultimately perform better in non-stressful situations. A good teacher should present sound fundamentals and command over the concepts as well as a broad knowledge beyond the realms of the particular course being taught. The teacher must provide useful interdisciplinary examples which make learning interesting and motivating to the students. Using interdisciplinary examples is essential because I teach students from different engineering schools. Good course material with problems, examples and real life applications is very effective. While advanced preparation is also essential, I believe that there should be enough room for flexibility and that some requirements need to be adapted as the course proceeds. Exams should be understood as a tool to evaluate both the student and the teacher. It is always good for a teacher to make sure that the exam is comprehensive and balanced. Any exam should be a mixture of exercises that suit various cognitive styles. It is essential to plan for the class objectives because vital information can be extracted by analyzing trends and common mistakes made in exams. The resulting information can be used to do coursework reviews, adapting course schedules or content and, advising students.

Finally, I see my success in the success of my students. It is rewarding when former students stop by to ask my opinion related to their other classes or their future plans. I was really touched when a former student asked me to evaluate his presentation for an American Institute of Aeronautics and Astronautics (AIAA) student conference. Subsequently; his presentation received an award at the conference, which gave me a great sense of accomplishment and pride.

As an international student offered a graduate research assistantship from an American university, I recognize the mission of education in this country. I can truly say that I find teaching a great opportunity to take part in this very great mission and there is no cause nobler.